

PoDI / NHS

FHWA PROJECT OF
DIVISION INTEREST (PoDI)?

☐ NO ☒ YES

NATIONAL HIGHWAY SYSTEM?

☐ NO ☒ YES

Related Projects:

P. E. UNDER PROJECT:

Project Number

Project Code:

xx

xx

R.O.W. Projects:

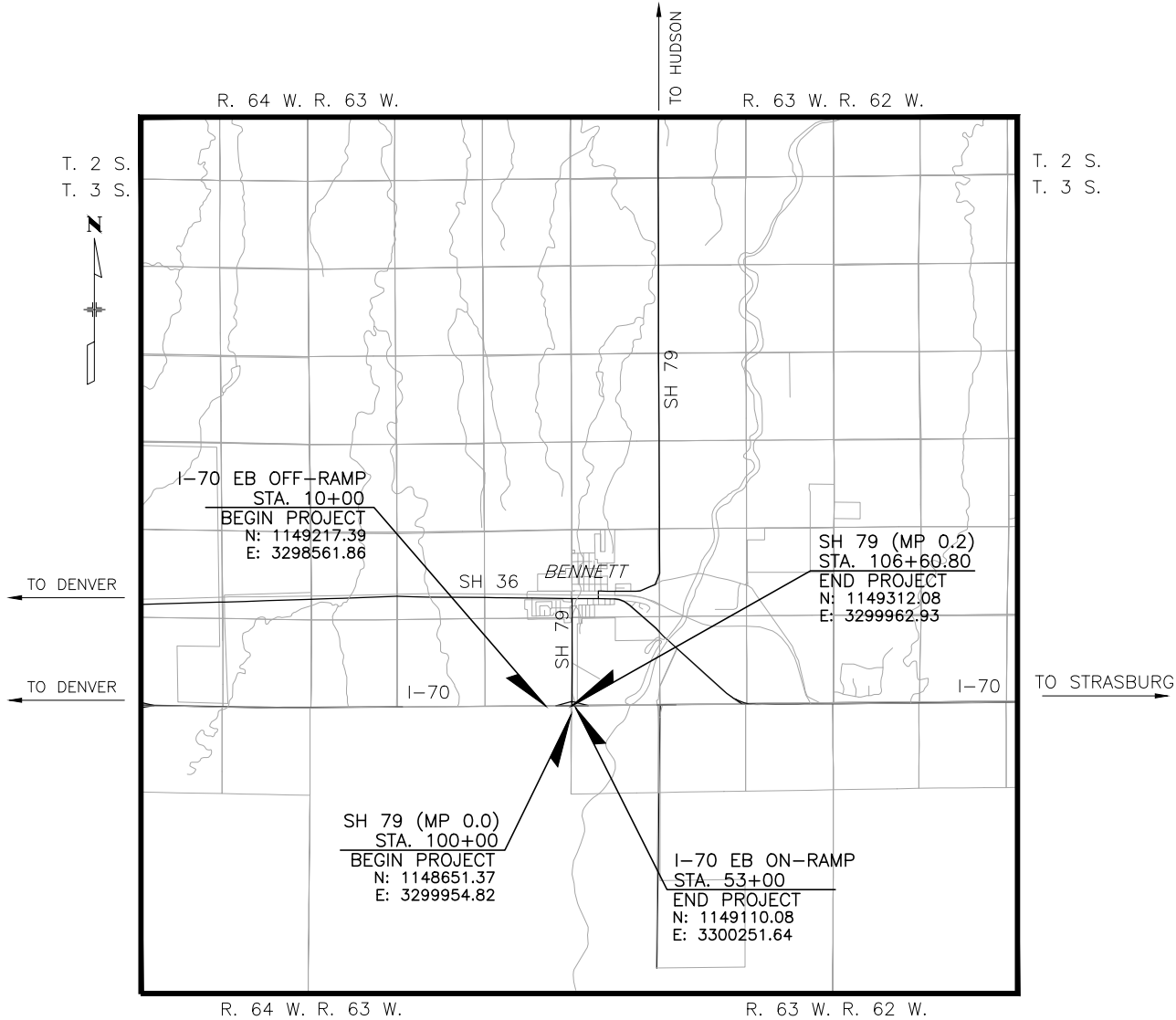
R.O.W. Project Description

TOWN OF BENNETT

HIGHWAY CONSTRUCTION BID PLANS OF PROPOSED
FEDERAL AID PROJECT NO. STU 0704-248
I-70 (EXIT 304) / SH 79 INTERCHANGE IMPROVEMENTS
ARAPAHOE COUNTY
CONSTRUCTION PROJECT CODE NO. 23180

TABULATION OF LENGTH & DESIGN DATA		
STATION	FEET	
	ROADWAY	
	I-70 EB RAMPS	SH 79
I-70 EB RAMPS BEGIN PROJECT STA. 10+00.00	1,715	661
END PROJECT STA. 53+00.00		
SH 79 BEGIN PROJECT STA. 100+00.00		
END PROJECT STA. 106+60.80		
TOTAL	1,715	661
SUMMARY OF PROJECT LENGTH	FEET	MILES
PROJECT GROSS LENGTH (MILES)	2,376	0.450
DESIGN DATA	I-70 EB RAMPS	SH 79
MAXIMUM RADIUS OF CURVE	1,950'	N/A
MAXIMUM GRADE	3.4%	3.4%
MINIMUM S.S.D. HORIZONTAL	360'	360'
MINIMUM S.S.D. VERTICAL	360'	360'
MAXIMUM DESIGN SPEED	45 MPH*	45 MPH
2040 DESIGN TRAFFIC	DHV=11% ADT=5,600	DHV=11% ADT=11,520
DHV TRUCK %	15.0%	8.8%
CLEAR ZONE DISTANCE (TANGENT)	24'	24'
CLEAR ZONE DISTANCE (RADIUS)	24'	24'
CONSTRUCTION CLEAR ZONE (MIN 18')	18'	18'

* 45 MPH AT C2, 30 MPH AT C3, 20 MPH AT L3, 30 MPH AT L4



PROJECT LOCATION MAP

SHEET NO.	INDEX OF SHEETS
1	TITLE SHEET
2	STANDARDS PLANS LIST
3	TYPICAL SECTION
4	SURVEY TABULATION SHEET
5	SURVEY CONTROL DIAGRAM
6-7	GENERAL NOTES
8-11	SUMMARY OF APPROXIMATE QUANTITIES
12-13	TABULATIONS
14	ALIGNMENT CONTROL PLAN
15	REMOVAL PLANS
16-18	ROADWAY PLAN & PROFILE
19	INTERSECTION PLAN
20	PAVING PLAN
21	STORM DRAIN PLAN & PROFILE
22-26	TRAFFIC SIGNAL PLANS
27	INTERCONNECT PLAN
28-30	SIGNING AND STRIPING PLANS
31	DETOUR PLAN
32-37	STORMWATER MANAGEMENT PLANS
38-39	EROSION CONTROL PLANS
40	UTILITY GENERAL NOTES
41	UTILITY PLAN
42-44	SUBSURFACE UTILITY ENGINEERING (SUE) PLANS
XS1-XS4	ROADWAY CROSS SECTIONS

AD PLANS

Print Date: 3/29/22

File Name: I70-SH79_TITLE SHEET.DWG

Horiz. Scale: 0.5:1

Unit Information

Short Elliott Hendrickson Inc.
Colorado Center Tower One
Suite 6000
2000 South Colorado Boulevard
Denver, CO 80222-7900

Tele. (720) 540-6800
(800) 490-4966
Fax (720) 540-6801

Sheet Revisions

Date:	Comments	Init.



TOWN OF BENNETT
207 MUEGGE WAY
BENNETT, CO 80102
TELE. (303) 644-3249
FAX (303) 644-4125

welcome neighbors.

As Constructed

No Revisions:

Revised:

Void:

Contract Information

Contractor:

Resident Engineer:

Project Engineer:

PROJECT STARTED: __/__/__

Comments:

ACCEPTED: __/__/__

Project No./Code

STU 0704-248

23180

Sheet Number

1

X:\AEB\BENNT1168270\Bennett Interchange Design\Drawings\I70-SH79_Title Sheet.dwg 3/18/2022 4:00 PM kclunis

X:\AEB\BENNT1156270\Bennett Interchange Design\Drawings\I70-SH79_Standard Plan List.dwg 3/10/2022 1:24 PM kclunis

PLAN NUMBER	M STANDARD TITLE	PAGE NUMBER
■ M-100-1	STANDARD SYMBOLS (3 SHEETS)	1-3
■ M-100-2	ACRONYMS AND ABBREVIATIONS (4 SHEETS)	4-7
□ M-203-1	APPROACH ROADS.....	8
□ M-203-2	DITCH TYPES	9
□ M-203-11	SUPERELEVATION CROWNED AND DIVIDED HIGHWAYS (3 SHEETS)	10-12
■ M-203-12	SUPERELEVATION STREETS (2 SHEETS)	13-14
□ M-206-1	EXCAVATION AND BACKFILL FOR STRUCTURES (2 SHEETS)	15-16
□ M-206-2	EXCAVATION AND BACKFILL FOR BRIDGES (2 SHEETS)	17-18
■ M-208-1	TEMPORARY EROSION CONTROL (11 SHEETS)	19-29
□ M-210-1	MAILBOX SUPPORTS (2 SHEETS)	30-31
□ M-214-1	NURSERY STOCK DETAILS	32
■ M-216-1	SOIL RETENTION COVERING (2 SHEETS)	33-34
■ M-412-1	CONCRETE PAVEMENT JOINTS (9 SHEETS)	35-39
	<i>(REVISED ON JANUARY 31, 2022)</i>	
□ M-412-2	CONCRETE PAVEMENT CRACK REPAIR (4 SHEETS) <i>(NEW, ISSUED ON OCTOBER 7, 2019)</i>	
□ M-510-1	STRUCTURAL PLATE PIPE H-20 LOADING	40
□ M-601-1	SINGLE CONCRETE BOX CULVERT (CAST-IN-PLACE)	41-42 (2 SHEETS)
□ M-601-2	DOUBLE CONCRETE BOX CULVERT (CAST-IN-PLACE)	43-44 (2 SHEETS)
□ M-601-3	TRIPLE CONCRETE BOX CULVERT (CAST-IN-PLACE)	45-46 (2 SHEETS)
□ M-601-10	HEADWALL FOR PIPES	47
□ M-601-11	TYPE "S" SADDLE HEADWALLS FOR PIPE	48
□ M-601-12	HEADWALLS AND PIPE OUTLET PAVING	49
□ M-601-20	WINGWALLS FOR PIPE OR BOX CULVERTS (2 SHEETS) ...	50-51
■ M-603-1	METAL PIPE (4 SHEETS)	52-55
□ M-603-2	REINFORCED CONCRETE PIPE	56
□ M-603-3	PRECAST CONCRETE BOX CULVERT	57
	<i>(REVISED ON SEPTEMBER 10, 2020)</i>	
□ M-603-4	CORRUGATED POLYETHYLENE PIPE (AASHTO M294) AND CORRUGATED POLYPROPYLENE PIPE (AASHTO M330) (2 sheets) <i>(REVISED ON MARCH 7, 2022)</i>	58
□ M-603-5	POLYVINYL CHLORIDE (PVC) PIPE (AASHTO M304)	59
□ M-603-6	STEEL REINFORCED POLYETHYLENE RIBBED PIPE (AASHTO MP 20)	60
□ M-603-10	CONCRETE AND METAL END SECTIONS	61
□ M-603-12	TRAVERSABLE END SECTIONS AND SAFETY GRATES	62-64 (3 SHEETS)
□ M-604-10	INLET, TYPE C	65
■ M-604-11	INLET, TYPE D	66
□ M-604-12	CURB INLET TYPE R (2 SHEETS)	67-68
□ M-604-13	CONCRETE INLET TYPE 13	69
□ M-604-20	MANHOLES (3 SHEETS)	70-72
□ M-604-25	VANE GRATE INLET (5 SHEETS)	73-77
□ M-605-1	SUBSURFACE DRAINS	78

PLAN NUMBER	M STANDARD TITLE	PAGE NUMBER
■ M-606-1	MIDWEST GUARDRAIL SYSTEM TYPE 3 W-BEAM 31 INCHES (19 SHEETS) <i>(REVISED ON MARCH 5, 2020)</i>	79-97
□ M-606-13	GUARDRAIL TYPE 7 F-SHAPE BARRIER (4 SHEETS)	98-101
□ M-606-14	PRECAST TYPE 7 CONCRETE BARRIER (4 SHEETS)	102-104
	<i>(REVISED ON AUGUST 21, 2020)</i>	
□ M-606-15	GUARDRAIL TYPE 9 SINGLE SLOPE BARRIER (11 SHEETS) <i>(REVISED ON MARCH 5, 2020)</i>	105-115
□ M-607-1	WIRE FENCES AND GATES (3 SHEETS)	116-118
□ M-607-2	CHAIN LINK FENCE (3 SHEETS)	119-121
□ M-607-3	BARRIER FENCE	122
□ M-607-4	DEER FENCE, GATES, AND GAME RAMPS (7 SHEETS).....	123-127
	<i>(REVISED ON JULY 13, 2020)</i>	
□ M-607-10	PICKET SNOW FENCE	128
■ M-607-15	ROAD CLOSURE GATE (9 SHEETS)	129-137
□ M-608-1	CURB RAMPS (10 SHEETS)	138-147
□ M-609-1	CURBS, GUTTERS, AND SIDEWALKS (4 SHEETS)	148-151
□ M-611-1	CATTLE GUARD (2 SHEETS)	152-153
□ M-611-2	DEER GUARD (2 SHEETS)	154-155
□ M-614-1	RUMBLE STRIPS (3 SHEETS)	156-158
□ M-614-2	SAND BARREL ARRAYS (2 SHEETS)	159-160
□ M-615-1	EMBANKMENT PROTECTOR TYPE 3	161
□ M-615-2	EMBANKMENT PROTECTOR TYPE 5	162
□ M-616-1	INVERTED SIPHON	163
□ M-620-1	FIELD LABORATORY CLASS 1	164
■ M-620-2	FIELD LABORATORY CLASS 2 (2 SHEETS)	165-166
□ M-620-11	FIELD OFFICE CLASS 1	167
■ M-620-12	FIELD OFFICE CLASS 2	168
□ M-629-1	SURVEY MONUMENTS (2 SHEETS)	169-170

COLORADO
DEPARTMENT OF TRANSPORTATION
M&S STANDARDS PLANS LIST

July 31, 2019

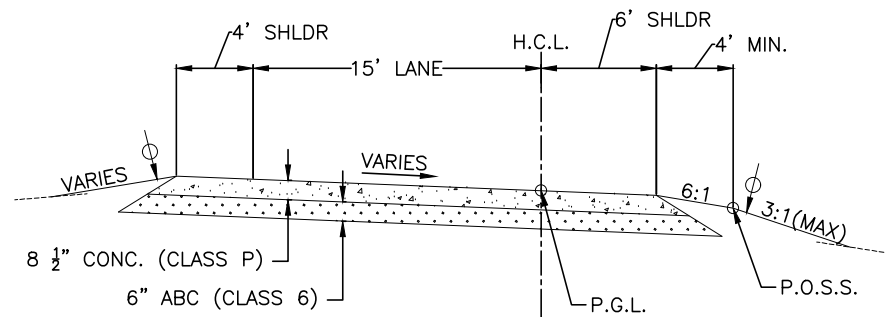
Revised on March 7, 2022

ALL OF THE M&S STANDARD PLANS, AS SUPPLEMENTED
AND REVISED, APPLY TO THIS PROJECT WHEN USED
BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

THE M&S STANDARD PLANS USED TO DESIGN THIS PROJECT ARE
INDICATED BY A MARKED BOX ■, AND WILL BE ATTACHED TO THE
PLANS. ALL THE OTHER M&S STANDARD PLANS ARE STILL ELIGIBLE
FOR CONSTRUCTION IF APPROVED BY AN APPROPRIATE CDOT ENGINEER.

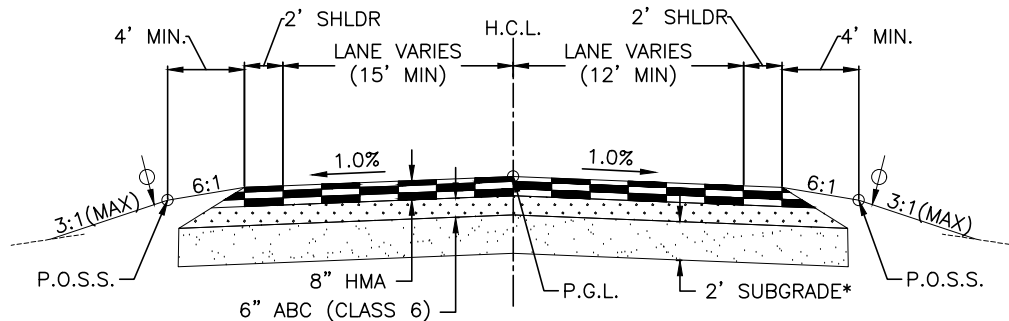
PLAN NUMBER	S STANDARD TITLE	PAGE NUMBER
■ S-612-1	DELINEATOR INSTALLATIONS (8 SHEETS)	171-178
□ S-613-1	ROADWAY LIGHTING (6 SHEETS)	179-186
	<i>(REVISED ON SEPTEMBER 30, 2020)</i>	
□ S-613-2	ALTERNATIVE ROADWAY LIGHTING (4 SHEETS) <i>(NEW, ISSUED ON SEPTEMBER 30, 2020)</i>	
■ S-614-1	GROUND SIGN PLACEMENT (2 SHEETS)	187-188
■ S-614-2	CLASS I SIGNS	189
■ S-614-3	CLASS II SIGNS	190
□ S-614-4	CLASS III SIGNS (3 SHEETS)	191-193
□ S-614-5	BREAK-AWAY SIGN SUPPORT DETAILS FOR CLASS III SIGNS (2 SHEETS)	194-195
□ S-614-6	CONCRETE FOOTINGS AND SIGN ISLANDS FOR CLASS III SIGNS (2 SHEETS)	196-197
■ S-614-8	TUBULAR STEEL SIGN SUPPORT DETAILS (7 SHEETS)	198-204
	<i>(REVISED ON DECEMBER 31, 2020)</i>	
S-614-9	PEDESTRIAN PUSH BUTTON POST ASSEMBLY (2 SHEETS)	205-206
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□ S-614-10	MARKER ASSEMBLY INSTALLATIONS	207
□ S-614-11	MILEPOST SIGN DETAIL FOR HIGH SNOW AREAS	208
□ S-614-12	STRUCTURE NUMBER INSTALLATION (2 SHEETS)	209-210
□ S-614-14	FLASHING BEACON AND SIGN INSTALLATIONS (4 SHEETS) .	211-214
■ S-614-20	TYPICAL POLE MOUNT SIGN INSTALLATIONS	215
□ S-614-21	CONCRETE BARRIER SIGN POST INSTALLATIONS (2 SHEETS) <i>(REVISED ON SEPTEMBER 21, 2020)</i>	216-217
■ S-614-22	TYPICAL MULTI-SIGN INSTALLATIONS	218
□ S-614-40	TYPICAL TRAFFIC SIGNAL 30'-75' DOUBLE MAST ARMS	219-223
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■ S-614-40A	ALTERNATIVE TRAFFIC SIGNAL 25'-55' SINGLE MAST ARMS (4 SHEETS)	224-227
□ S-614-41	TEMPORARY SPAN WIRE SIGNALS (13 SHEETS)	228-240
■ S-614-42	CABINET FOUNDATION DETAIL (4 SHEETS)	241-244
■ S-614-43	TRAFFIC LOOP AND MISCELLANEOUS SIGNAL DETAILS	245-252 (8 SHEETS)
□ S-614-44	PEDESTAL POLE SIGNALS (2 SHEETS)	253-254
□ S-614-45	PEDESTRIAN PUSH BUTTON POST ASSEMBLY DETAILS (6 SHEETS) <i>(REVISED ON DECEMBER 3, 2020)</i>	
□ S-614-50	STATIC SIGN MONOTUBE STRUCTURES (12 SHEETS)	255-266
□ S-614-60	DYNAMIC SIGN MONOTUBE STRUCTURES (14 SHEETS)	267-280
■ S-627-1	PAVEMENT MARKINGS (9 SHEETS)	281-289
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■ S-630-1	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	290-313 (24 SHEETS)
■ S-630-2	BARRICADES, DRUMS, CONCRETE BARRIERS (TEMP).....	314
	AND VERTICAL PANELS	
□ S-630-3	FLASHING BEACON (PORTABLE) DETAILS	315
□ S-630-4	STEEL SIGN SUPPORT (TEMPORARY) INSTALLATION	316-317 (2 SHEETS)
□ S-630-5	PORTABLE RUMBLE STRIPS (TEMPORARY) (2 SHEETS)	318-319
□ S-630-6	EMERGENCY PULL-OFF AREA (TEMPORARY)	320
□ S-630-7	ROLLING ROADBLOCKS FOR TRAFFIC CONTROL	321-323 (3 SHEETS)

Print Date: 3/29/22		<div>○</div> <div>○</div> <div>○</div> <div>○</div>	Sheet Revisions			<div><div>TOWN OF BENNETT 207 MUEGGE WAY BENNETT, CO 80102 TELE. (303) 644-3249 FAX (303) 644-4125</div><div>welcome neighbors.</div></div>	As Constructed		STANDARDS PLANS LIST			Project No./Code	
File Name: I70-SH79_STANDARD PLAN LIST.DWG			Date:	Comments	Init.		No Revisions:					STU 0704-248	
Horiz. Scale: 0.5:1 Vert. Scale: As Noted							Revised:		Designer: A. MARQUEZ	Structure		23180	
Unit Information Unit Leader Initials							Void:		Detailer: M. WAGNER	Numbers		Sheet Number	
<div><div>Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 6000 2000 South Colorado Boulevard Denver, CO 80222-7900</div><div>Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801</div></div>									Sheet Subset: SPL		Subset Sheets: 1 of 1		2

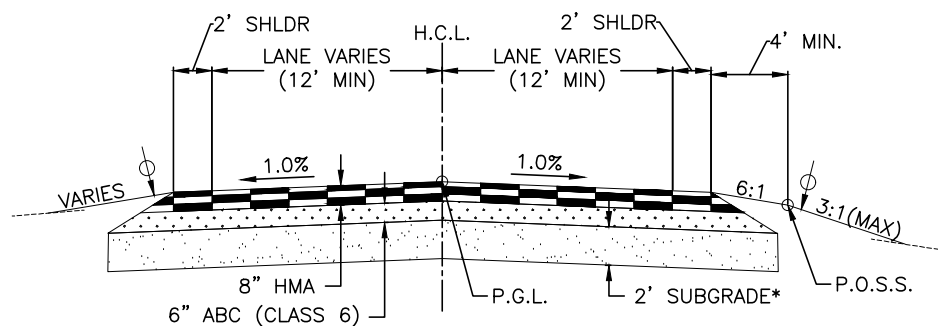


I-70 RAMP TYPICAL SECTION
OFF-RAMP STA 18+35.68 TO STA 23+99.98
ON-RAMP STA 50+14.18 TO STA 51+68.88

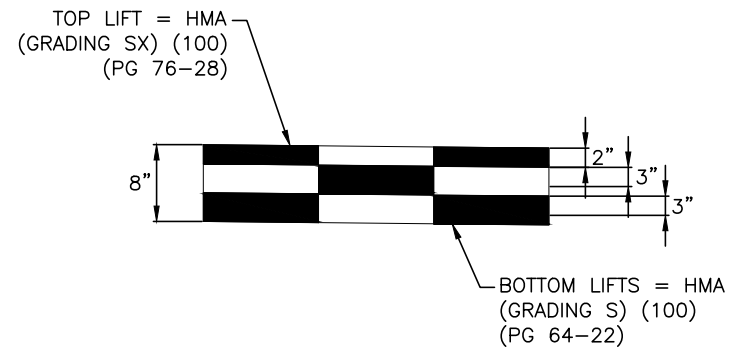
*SUBGRADE IS MOISTURE CONDITIONED AND RECOMPACTED (A-6 OR BETTER WITH MIN. R-VALUE OF 19).



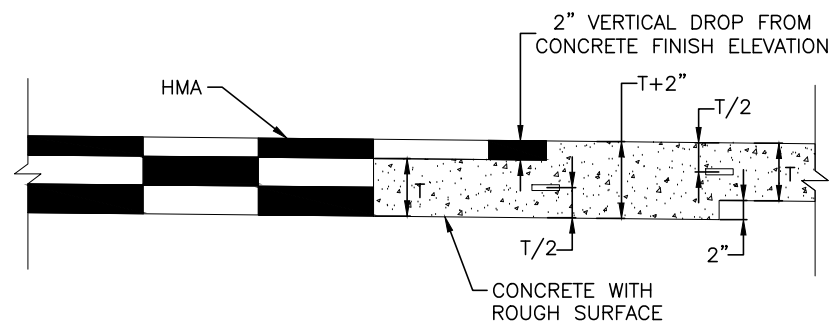
SH 79 TYPICAL SECTION
STA 102+74.67 TO STA 103+59.21



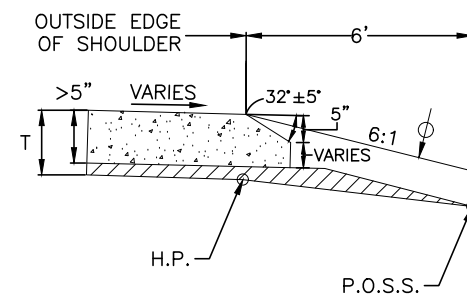
SH 79 TYPICAL SECTION
STA 104+25.10 TO STA 105+30.36



HMA PAVEMENT SECTION
(REQUIRES 3 LIFTS)



ASPHALT TO CONCRETE TRANSITION
(NOT TO SCALE)



CONCRETE AND HOT MIX ASPHALT SAFETY EDGE DETAIL

P.G.L. ~ Profile Grade Line
H.M.A. ~ Hot Mix Asphalt
H.P. ~ Hinge Point
P.O.S.S. ~ Point of Slope Selection
~ Minimum 6" Topsoil or Specified Alternative

Print Date: 3/29/22		<div><p>TOWN OF BENNETT 207 MUEGGE WAY BENNETT, CO 80102 TELE. (303) 644-3249 FAX (303) 644-4125</p><p>welcome neighbors.</p></div>			As Constructed		TYPICAL SECTION		Project No./Code	
File Name: I70-SH79_TYPICAL SECTION.DWG					No Revisions:				STU 0704-248	
Horiz. Scale: 0.5:1 Vert. Scale: As Noted					Revised:		Designer: A. MARQUEZ	Structure Numbers	23180	
Unit Information Unit Leader Initials					Void:		Detailer: K. KULESZA		Sheet Number 3	
<div><p>Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 6000 2000 South Colorado Boulevard Denver, CO 80222-7900</p><p>Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801</p></div>										

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TO ESTABLISH GEOMETRIC CONTROL FOR THE CONSTRUCTION OF THIS PROJECT, THE DEPARTMENT HAS PROVIDED THE FOLLOWING INFORMATION:

Format *

☐ 3D Design Modeling Electronic Files

☐ Horizontal Control

☐ Vertical Control

☐ Roadway Alignment

☐ Original Terrain Data

☐ Other:

Plan Sheet

Plan Sheet

Plan Sheet

* Specify the information format, ie., plan sheet, computer disk, computer printout, or other.
The information marked is either contained on the plans or is available from the Engineer.

TYPE OF PROJECT

☐ Landscaping

☐ Signalization

☐ Safety Improvement

☐ Asphalt Overlay

☐ Concrete Overlay

☐ Minor Widening

☐ Major Reconstruction

☐ New Roadway Construction

☐ Bridge Replacement

☐ Bridge Widening

☐ New Bridge

☐ Other:

SURVEY WORK TO BE PERFORMED BY OTHERS:

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 625:

☐ A complete passing base line report (completed within 6 months prior to the start of the project)

☐ An instrument calibration certification (completed within 6 months prior to the start of the project)

☐ Establish and Maintain Project Centerline or Engineer Approved Offset Line(s)

☐ Verification and Maintenance of Horizontal and Vertical Control

☐ Verify or Determine existing grades and alignments

☐ Verify or Determine existing topography

☐ Clearing and Grubbing Limits (Section 201)

☐ Removal Limits (Section 202)

☐ Reset Items (Section 210)

☐ Excavation and Embankment (Section 203)

☐ Excavation

☐ Unclassified

☐ Stripping

☐ Muck

☐ Rock

☐ Borrow

☐ Other:

☐ Potholing

☐ Embankment

☐ Site Grading

☐ Erosion Control (Perm)

☐ Other:

☐ As Staked Earthwork Quantities (See General Notes)

☐ Landscaping

☐ Top Soil (Section 207)

☐ Seeding (Section 212)

☐ Mulching (Section 213)

☐ Planting (Section 214)

☐ Herbicide (Section 217)

☐ Other:

☐ Erosion Control (Section 208)

☐ Seeding (Temp)

☐ Silt Fence

☐ Erosion Bales

☐ Erosion Logs

☐ Riprap (Temp)

☐ Other:

☐ Roadway Bases

☐ Untreated Subgrade

☐ Treated Subgrade

☐ Aggregate Base Course (Section 304)

☐ Reconditioning

☐ PMBB – Plant Mix Bituminous Base

☐ Other:

Excavation	Slope Staking (Y/N)	Grid (Y/N)	Grade (Y/N)	Special Interval
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

Embankment	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

Roadway Bases	Grid (Y/N)	Grade (Y/N)	Special Interval	Special Offset
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

☐ Pavements

☐ HMA – Hot Mix Asphalt (Section 403)

☐ Concrete (Section 412)

☐ Heating & Scarifying Treatment

☐ Prime Coat, Tack Coat & Rejuvenating Agent (Section 407)

☐ Seal Coat or Chip Seal (Section 409)

☐ Other:

☐ Roadway Elements

☐ Curb and Gutter (Section 609)

☐ Drop inlets – alignment and grades (Section 604)

☐ Retaining Walls

☐ Guard Rail (Section 606)

☐ Sidewalk (Section 608)

☐ Overlay Stationing

☐ Other:

☐ Riprap (Perm) (Section 506)

☐ Slope and Ditch Paving (Section 507)

☐ Minor Structures

☐ Structure Excavation limits (Section 206)

☐ Culverts (Section 603)

☐ Culverts w/ Headwalls and Wingwalls (Section 601)

☐ Concrete Box Culverts w/ Headwalls and Wingwalls

☐ Pipes (Section 603)

☐ Sanitary Sewer

☐ Storm Sewer

☐ Water

☐ Irrigation

☐ Miscellaneous

☐ Manholes (Section 604)

☐ Inlets (Section 604)

☐ Permanent Water Quality BMP (Section 208)

☐ Other:

☐ Major Structures – Overhead Signs (Section 614), Concrete Box Culverts, Bridges – and all other structures assigned a structure number

☐ Structure Excavation limits (Section 206)

☐ Concrete Box Culverts (Section 603) w/ Headwalls and Wingwalls (Section 601)

☐ Piling locations and cut off elevations (Section 502)

☐ Caisson locations and elevations (Section 503)

☐ Footing locations, alignment, and elevations

☐ Abutment/Pier locations, alignment, and elevations

☐ Wingwall skew angles/offsets

☐ Structural concrete form locations

☐ Substructure As-constructed survey required for Bridges (Subsection 601 .12) and Overhead signs (S-614-50)

☐ Bridge expansion joint(s) alignment and grade (longitudinal and transverse)

☐ Deck grades at Girder 10th or "n" th point locations and elevations

☐ Slope and Ditch Paving (Section 507)

☐ Other:

☐ Fencing (Section 607)

☐ Temporary

☐ Permanent

☐ Sound Barrier

☐ Other:

☐ Delineators (Section 612)

☐ Temporary

☐ Permanent

☐ Lighting (Section 613) and Traffic Control Devices (Permanent) (Section 614)

☐ Signal pole locations and elevations

☐ Light pole locations and elevations

☐ Sign locations

☐ Field verify sign post locations, elevations, and lengths before fabrication.

☐ Other:

Pavements	Grid (Y/N)	Special Interval	Special Offset
	-	-	-
	-	-	-
	-	-	-
	-	-	-

Curb & Gutter	Tangent Interval	Curve Interval	Special Offset
	-	-	-

Stationing	Left Interval	Center Interval	Right Interval
	-	-	-

☐ Pavement Marking (Section 627)

☐ Striping (Temp)

☐ Striping (Perm)

☐ Symbols

☐ Other:

☐ Temporary Lighting and Construction Traffic Control Devices (Section 630)

☐ Signal pole locations and elevations (Temp)

☐ Light pole locations and elevations (Temp)

☐ Sign Locations (Temp)

☐ Other:

☐ All Easements (Temp Staking by P.L.S. Only)

☐ Right of Way (Temp Staking by P.L.S. Only)

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 629:

☐ Monumentation (Section 629)

☐ Control

☐ Right of Way

☐ Land corners, Aliquot corners

☐ Easements

☐ Reference the specified existing monuments: **

☐ Replace the specified existing monuments: **

☐ Locate monuments. It is estimated ____ hours are required.

NOTE: All 629 items shall include adequate research, calculations, and evaluations of evidence for monuments to be set.

** A Tabulation of Survey Monuments may be provided on the plans.

GENERAL NOTES:

1. Unless indicated otherwise on this Survey Tabulations Sheet, all survey work and staking intervals shall be done in accordance with the latest edition of the CDOT Survey Manual.
2. Adequate information for establishing lines, grades, and locations for all work items have been specified on the plans. Any additional information required to stake the item or element shall be generated by the Contractor's surveyor.
3. The Contractor's surveyor shall provide an estimate of the man-hours necessary to complete the work items indicated on this sheet. A copy of this sheet, with the estimated man-hours written on the blank line to the left of the specified items, shall be submitted with the Survey Schedule to the Engineer 10 days prior to the Presurvey Conference – Construction Survey.
4. Stakes and Monuments which are damaged or destroyed by the progress of construction shall be replaced by the Contractor at no additional cost to the Department.
5. The Contractor shall furnish an As Staked (or 3D Design Modeling Electronic Files) Earthwork Quantity report to the Engineer prior to completion of twenty percent (20%) of the planned earthwork in any phase as per the CDOT Survey Manual. A printed copy of the As Staked (or 3D Design Modeling Electronic Files) Earthwork data report and a computer disk with that information on it, in the specified format shall be submitted to the Engineer. The Contractor shall field verify original ground cross sections at a maximum 500 feet intervals.
6. Prior to beginning work on any subsequent operation, such as placing base course or paving, the Contractor shall certify in writing to the Engineer that the final grade is within specified tolerance.
7. The Contractor's surveyor shall perform all field surveying and calculations necessary to tie plan grades into field grades.
8. The Contractor shall coordinate construction staking on the project with any utility work.
9. Fieldbooks shall contain daily records of points set and or measurements observed. The information recorded shall contain: date, crew members' names, point no., description, staking information, and sketches. If the survey information is collected electronically, information recorded shall be provided to the Project Engineer in a hard copy format that is intuitive, clear and related to the supplemental information recorded in the field books. All linear surveys, such as slope stakes and blue tops, shall have the station and offset information related to the measured information. Non-linear surveys such as structures staking shall have sketches relating electronic information, such as point numbers, to the sketch.
10. The Contractor's surveyor shall submit the following fieldbooks to the Engineer:

☐ Horizontal Control (Primary & Secondary)

☐ Vertical Control (i.e. Benchmarks)

☐ Property Pin Ties

☐ Horizontal Alignment

☐ Grading

☐ Slope Staking

☐ Minor Structures

☐ Major Structures

☐ One fieldbook for each work category shown on this sheet

☐ Other Fieldbook(s):
11. The Contractor's surveyor shall submit the following (prior to surveying on the project) to the Engineer:

☐ All required Instrument Calibrations

Print Date: 3/29/22

File Name: 170-SH79_SURVEY TABULATION.DWG

Horiz. Scale: 0.5:1

Unit Information

Short Elliott Hendrickson Inc.
Colorado Center Tower One
Suite 6000
2000 South Colorado Boulevard
Denver, CO 80222-7900

Tele. (720) 540-6800
(800) 490-4966
Fax (720) 540-6801

Sheet Revisions

Date:

Comments

Init.



TOWN OF BENNETT
207 MUEGGE WAY
BENNETT, CO 80102
TELE. (303) 644-3249
FAX (303) 644-4125

welcome neighbors.

As Constructed

No Revisions:

Revised:

Void:

SURVEY TABULATION

Designer: A. MARQUEZ

Detailer: K. KULESZA

Sheet Subset: SURVTAB

Structure Numbers

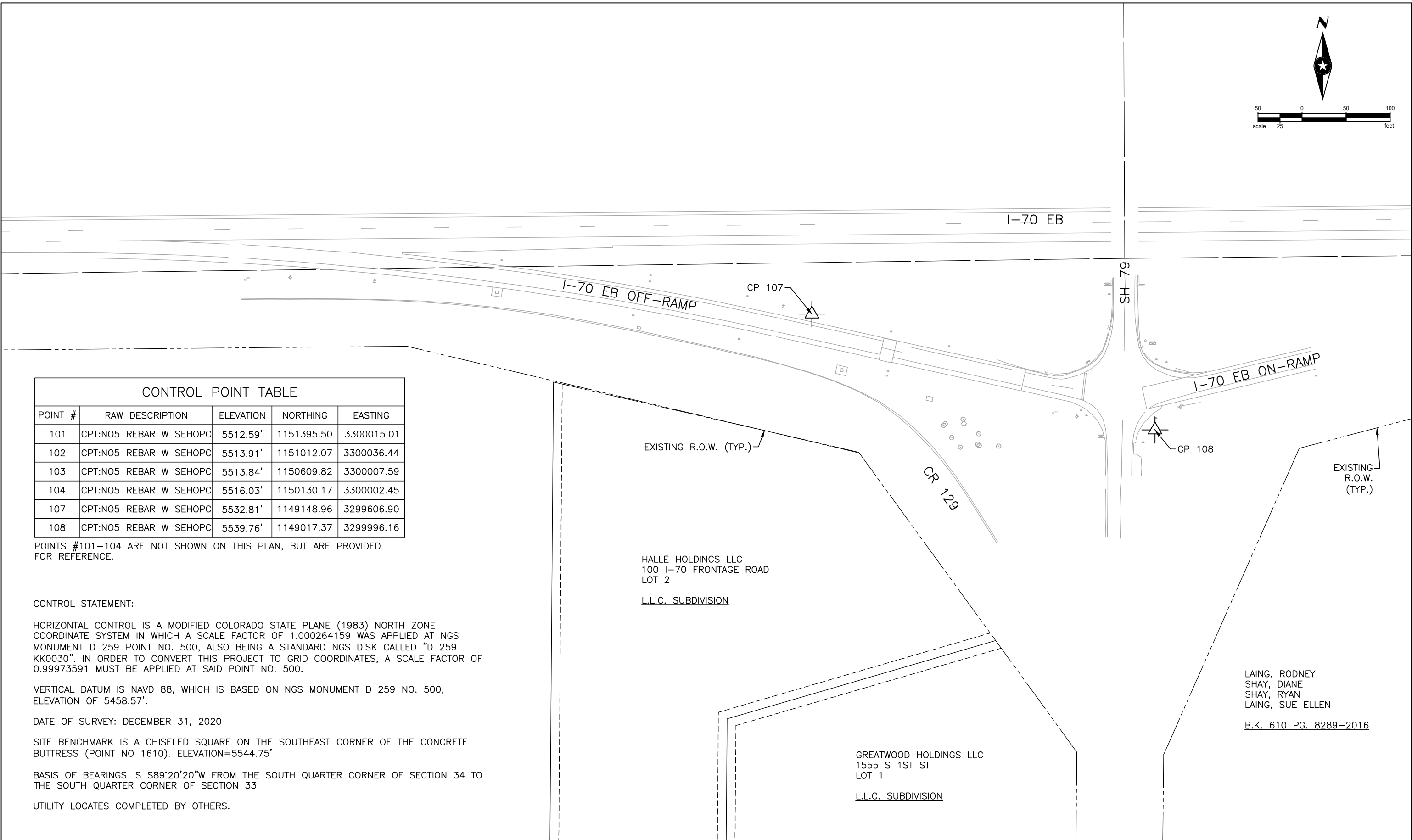
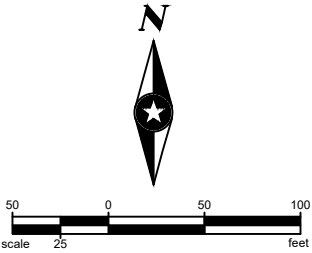
Subset Sheets: 1 of 1

Project No./Code

STU 0704-248

23180

Sheet Number 4



CONTROL POINT TABLE				
POINT #	RAW DESCRIPTION	ELEVATION	NORTHING	EASTING
101	CPT:NO5 REBAR W SEHOPC	5512.59'	1151395.50	3300015.01
102	CPT:NO5 REBAR W SEHOPC	5513.91'	1151012.07	3300036.44
103	CPT:NO5 REBAR W SEHOPC	5513.84'	1150609.82	3300007.59
104	CPT:NO5 REBAR W SEHOPC	5516.03'	1150130.17	3300002.45
107	CPT:NO5 REBAR W SEHOPC	5532.81'	1149148.96	3299606.90
108	CPT:NO5 REBAR W SEHOPC	5539.76'	1149017.37	3299996.16

POINTS #101-104 ARE NOT SHOWN ON THIS PLAN, BUT ARE PROVIDED FOR REFERENCE.

CONTROL STATEMENT:

HORIZONTAL CONTROL IS A MODIFIED COLORADO STATE PLANE (1983) NORTH ZONE COORDINATE SYSTEM IN WHICH A SCALE FACTOR OF 1.000264159 WAS APPLIED AT NGS MONUMENT D 259 POINT NO. 500, ALSO BEING A STANDARD NGS DISK CALLED "D 259 KK0030". IN ORDER TO CONVERT THIS PROJECT TO GRID COORDINATES, A SCALE FACTOR OF 0.99973591 MUST BE APPLIED AT SAID POINT NO. 500.

VERTICAL DATUM IS NAVD 88, WHICH IS BASED ON NGS MONUMENT D 259 NO. 500, ELEVATION OF 5458.57'.

DATE OF SURVEY: DECEMBER 31, 2020

SITE BENCHMARK IS A CHISELED SQUARE ON THE SOUTHEAST CORNER OF THE CONCRETE BUTTRESS (POINT NO 1610). ELEVATION=5544.75'

BASIS OF BEARINGS IS S89°20'20"W FROM THE SOUTH QUARTER CORNER OF SECTION 34 TO THE SOUTH QUARTER CORNER OF SECTION 33

UTILITY LOCATES COMPLETED BY OTHERS.

Print Date: 3/29/22		<div><div><div></div><div></div><div></div><div></div></div></div>	Sheet Revisions			<div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div> <div><div></div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div><div></div></div> <div><div></div><div></div><div></div><div></div></div> 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X:\AEB\BENNETT\156270\Bennett Interchange Design\Drawings\I70-SH79_Survey Control.dwg 5/3/2021 8:17 AM kulesza

GENERAL NOTES:

1. ALL MATERIAL, EQUIPMENT, INSTALLATION AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, CDOT STANDARD PLANS (M&S STANDARDS), FHWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS AND THE COLORADO SUPPLEMENT THERETO, TOWN OF BENNETT ROADWAY DESIGN AND CONSTRUCTION STANDARDS, TOWN OF BENNETT STORM DRAINAGE CRITERIA MANUAL, TOWN OF BENNETT SANITARY SEWER/WATER SYSTEM DESIGN AND CONSTRUCTION STANDARDS, AND IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS INCLUDED HEREIN.
2. FOR PRELIMINARY PLAN QUANTITIES OF PAVEMENT MATERIALS, THE FOLLOWING RATES OF APPLICATION WERE USED.

TACK COAT DILUTED EMULSIFIED

0.10 GAL. PER SQ. YD. (DILUTED) ASPHALT (SLOW-SETTING)

HOT MIX ASPHALT

146.7 LBS. / CU. FT.

AGGREGATE BASE COURSE

133 LBS. / CU. FT.
3. DILUTED EMULSIFIED ASPHALT FOR TACK COAT SHALL CONSIST OF 1 PART EMULSIFIED ASPHALT AND 1 PART WATER. THIS WILL NOT BE PAID FOR SEPARATELY AND IS INCLUDED IN THE COST FOR ITEM 403, HOT MIX ASPHALT.
4. THE FOLLOWING SHALL BE FURNISHED WITH EACH ASPHALT PAVER.

* A SKI TYPE DEVICE AT LEAST 30 FEET IN LENGTH. (50 FEET IN LENGTH FOR FINAL LIFT)

* SHORT SKI SHOE

* 1500 FEET OF CONTROL LINE AND STAKES
5. ANY LAYER OF ASPHALT PAVEMENT THAT IS TO HAVE A SUCCEEDING LAYER PLACED THEREON SHALL BE COMPLETED FULL WIDTH BEFORE THE SUCCEEDING LAYER IS PLACED.
6. A TACK COAT IS REQUIRED BETWEEN ALL LIFTS OF HMA, WHICH WILL BE CONSIDERED SUBSIDIARY TO ITEM 403 AND WILL NOT BE PAID FOR SEPARATELY.
7. WHERE PAVEMENT IS TO ABUT EXISTING PAVEMENT, THE EXISTING PAVEMENT SHALL BE REMOVED TO A NEAT VERTICAL LINE, USING A SAW OR OTHER METHOD AS APPROVED, TO CREATE A CLEAN CONSTRUCTION JOINT. THERE SHALL BE NO SEPARATE PAYMENT FOR SAW CUTTING. THE CONTRACTOR WILL ALSO BE REQUIRED TO PAINT THE EDGE WITH DILUTED EMULSIFIED ASPHALT (SLOW-SETTING) PRIOR TO PAVING OPERATIONS. THE RATE OF APPLICATION SHALL BE AS DETERMINED BY THE ENGINEER AT THE TIME OF APPLICATION.
8. WATER SHALL BE USED AS A DUST PALLIATIVE AS DIRECTED BY THE ENGINEER. LOCATIONS SHALL BE AS DIRECTED. COST FOR DUST PALLIATIVE SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE WORK.
9. DEPTH OF MOISTURE DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:

FULL DEPTH OF EMBANKMENT FOR ROADWAY

SUBGRADE BELOW ROADBED ~ 2 FEET DEPTH

BASES OF CUTS ~ 8 INCHES DEPTH

BASES OF FILLS ~ 8 INCHES DEPTH (AFTER TOPSOIL STRIPPING)
10. EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUT AND FILLS WILL BE CONSIDERED SUBSIDIARY TO ITEM 203, AND WILL NOT BE PAID FOR SEPARATELY.
11. THE TYPE OF COMPACTION FOR THIS PROJECT WILL BE AASHTO T-180, AND T-99 FOR EMBANKMENT.
12. FULL COMPLIANCE PAVEMENT MARKINGS AND ROADSIDE DELINEATION SHALL BE IN PLACE AT THE END OF EACH WORKING DAY UNLESS OTHERWISE APPROVED BY THE ENGINEER.
13. IF ANY SOIL CONTAMINATION IS SUSPECTED WHILE EXCAVATING, IMMEDIATELY CONTACT THE ENGINEER AND FOLLOW STANDARD SPECIAL 250.
14. THE CONTRACTOR SHALL NOT STOCKPILE ANY MATERIAL WITHIN CDOT R.O.W. UNLESS APPROVED BY THE ENGINEER.
15. THE CONTRACTOR SHALL SUBMIT A PLAN ADDRESSING LOCAL DRAINAGE DURING EACH PHASE OF CONSTRUCTION TO THE ENGINEER FOR REVIEW. THIS SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.
16. CONTROL OF SURFACE RUNOFF AND REPAIR OF DAMAGES RESULTING FROM RUNOFF IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE INCLUDED IN THE COST OF THE WORK.
17. ALL SHOULDERS AND OTHER PAVED AREAS SHALL BE SWEEPED ON A DAILY BASIS TO REMOVE ANY FOREIGN DEBRIS FROM THE SHOULDER AND TRAVELED WAY. ALL SWEEPING OPERATIONS SHALL BE DONE BY A PICK-UP TYPE BROOM AND SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.
18. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES DURING CONSTRUCTION AND IS RESPONSIBLE FOR ANY DAMAGE THERETO.
19. CLEARING AND GRUBBING WILL NOT BE ALLOWED BEYOND THE CONSTRUCTION LIMITS OR REQUIRED CLEAR ZONE. THIS WORK WILL BE MEASURED AND PAID FOR PER ACRE.
20. APPROPRIATE MEASURES WILL BE TAKEN TO PREVENT THE INTRODUCTION AND SPREAD OF NOXIOUS WEEDS BY RE-ESTABLISHING A PERMANENT DESIRABLE VEGETATION COMMUNITY WITHIN PROJECT LIMITS, WHICH THE CONSTRUCTION CONTRACTOR MUST FOLLOW.

21. IT IS ESTIMATED THAT 8 HOURS OF WILDLIFE BIOLOGIST WILL BE REQUIRED FOR THIS PROJECT.
22. HAZARDOUS MATERIALS, INCLUDING FUELS AND LUBRICATING OILS, SHALL NOT BE STORED ANYWHERE ON THE CORRIDOR.
23. THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND/OR TOES OF SLOPE AS SHOWN ON THE PLANS AND CROSS SECTIONS. ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITIONS BY THE CONTRACTOR AT HIS/HER OWN EXPENSE. CONSTRUCTION ACTIVITIES, IN ADDITION TO NORMAL CONSTRUCTION PROCEDURES, SHALL INCLUDE THE PARKING OF VEHICLES OR EQUIPMENT, DISPOSAL OF LITTER, AND ANY OTHER ACTION WHICH WOULD ALTER EXISTING CONDITIONS.
24. IN FILL SECTIONS, THE BASES UPON WHICH EMBANKMENT MATERIAL IS TO BE PLACED BELOW THE ROADBED SHALL BE SCARIFIED TO A DEPTH OF 8 INCHES AND THEN RECOMPACTED WITH MOISTURE AND DENSITY CONTROL. IN CUT SECTIONS, THE EARTH SHALL BE REMOVED FROM THE FULL WIDTH OF THE ROADBED TO THE DESIGNATED DEPTH AND THE EARTH SUBGRADE SHALL BE THOROUGHLY SCARIFIED TO A DEPTH OF 2 FEET AND THEN RECOMPACTED WITH MOISTURE AND DENSITY CONTROL. THE MOISTURE CONTENT OF THE SCARIFIED MATERIAL SHALL BE INCREASED OR DECREASED, AS NECESSARY, TO OBTAIN THE TYPE OF COMPACTION SPECIFIED. SCARIFICATION AND COMPACTION WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED SUBSIDIARY TO ROADWAY CONTRACT PAY ITEM 203, UNCLASSIFIED EXCAVATION (CIP).
25. ALL EMBANKMENT MATERIAL SHALL CONSIST OF MATERIAL WHICH IS A NON-EXPANSIVE, GRANULAR SOIL. THE CONTRACTOR SHALL FURNISH EVIDENCE THAT THE EMBANKMENT MATERIAL FROM THE SITE OR OTHER SOURCES, FOR USE IN THE ROADWAY EMBANKMENT, MEETS THE REQUIREMENTS AND SHALL PAY FOR SUCH TESTS AS MAY BE REQUIRED TO SHOW COMPLIANCE. NEW EMBANKMENT SHALL BE BENCHED INTO THE EXISTING SLOPES WHERE REQUIRED IN ACCORDANCE WITH 203.06 OF THE STANDARD SPECIFICATIONS. THE MINIMUM THICKNESS OF THE TOPSOIL SHALL BE 6 INCHES AND WILL BE OBTAINED FROM THE CONTRACTOR'S SOURCES. THE TOPSOIL SHALL BE APPLIED TO ALL DISTURBED AREAS, OR AS DIRECTED BY THE ENGINEER.
26. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING PROPERTY ACCESSES (INCLUDING RESIDENTIAL AND COMMERCIAL) AT ALL TIMES DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE PROJECT.
27. THE CONTRACTOR SHALL MASK ALL SIGNS CONFLICTING WITH CONSTRUCTION SIGNING. THE MASKING OF SIGNS WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE WORK.
28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR ALL APPLICABLE AGENCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO, EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY. REFER TO OSHA PUBLICATION 2226, EXCAVATING AND TRENCHING.
30. THE CONTRACTOR SHALL HAVE, ON SITE AT ALL TIMES, ONE (1) COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB.
31. IF, DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
32. A STATE CONSTRUCTION DEWATERING WASTEWATER DISCHARGE PERMIT IS REQUIRED FOR WATER THAT IS DISCHARGED INTO A STREAM, STORM SEWER, CHANNEL, IRRIGATION DITCH, OR ANY WATERS OF THE UNITED STATES.
33. THE CONTRACTOR SHALL COMPLY WITH ALL TERMS AND CONDITIONS OF THE COLORADO PERMIT FOR STORMWATER DISCHARGE (CONTACT COLORADO DEPARTMENT OF HEALTH, WATER QUALITY CONTROL DIVISION, (303) 692-3590), THE STORMWATER MANAGEMENT PLAN, AND THE EROSION CONTROL PLAN.
34. TEMPORARY EROSION CONTROL DURING CONSTRUCTION SHALL BE PROVIDED AS SHOWN ON THE EROSION CONTROL PLAN, AND AS DIRECTED BY THE ENGINEER. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE CONTRACTOR, UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREAS IS STABILIZED WITH HARD SURFACE OR LANDSCAPING.
35. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION TRAFFIC CONTROL PLAN, IN ACCORDANCE WITH MUTCD AND CDOT STANDARD FOR TRAFFIC CONTROL S-630-1, TO TOWN FOR APPROVAL, PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN, OR AFFECTING, THE RIGHT-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY THE CONSTRUCTION ACTIVITIES.
36. THERE SHALL BE NO SITE CONSTRUCTION ACTIVITIES ON SATURDAYS, UNLESS SPECIFICALLY APPROVED BY THE ENGINEER, AND NO SITE CONSTRUCTION ACTIVITIES ON SUNDAYS OR HOLIDAYS, UNLESS THERE IS PRIOR WRITTEN APPROVAL BY CDOT AND THE TOWN. A MINIMUM 48 HOURS NOTICE IS REQUIRED.
37. WHERE FENCES ARE IMPACTED BY THE CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING, RESETTNG, OR MAINTAINING THE IMPACTED FENCE. ALL PRIVATE LIVESTOCK AREAS SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION OF NEW FENCES OR TEMPORARY FENCES, IF NECESSARY. TEMPORARY FENCE WILL NOT BE MEASURED AND PAID FOR SEPARATELY.
38. THE UTILITY INFORMATION SHOWN ON THE PLANS IS PLOTTED FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR IS FULLY RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES AND AVOIDING THEM. REFER TO PARAGRAPH 105.11 OF THE STANDARD SPECIFICATIONS. CONDUIT RUNNING LINE ALIGNMENT MAY BE MOVED TO AVOID EXISTING UTILITIES WITH THE APPROVAL OF THE ENGINEER. CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY UTILITY CONFLICT WHICH CANNOT BE READILY RESOLVED AND WHICH MAY REQUIRE RE-DESIGN OF ANY PART OF THE PROJECT.

Print Date: 3/29/22		<div><div></div><div></div><div></div><div></div><div></div></div>	Sheet Revisions			<div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>TOWN OF BENNETT</div><div>207 MUEGGE WAY</div><div>BENNETT, CO 80102</div><div>TELE. (303) 644-3249</div><div>FAX (303) 644-4125</div></div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div>welcome neighbors.</div></div></div>	As Constructed		GENERAL NOTES			Project No./Code	
File Name: I70-SH79_GENERAL NOTES.DWG			Date:	Comments	Init.		No Revisions:					STU 0704-248	
Horiz. Scale: 0.5:1 Vert. Scale: As Noted			<div></div>					Revised:	Designer: A. MARQUEZ	Structure Numbers	23180		
Unit Information Unit Leader Initials			<div></div>					Void:	Detailer: M. WAGNER		Sheet Number 6		
<div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>Short Elliott Hendrickson Inc.</div><div>Colorado Center Tower One</div><div>Suite 6000</div><div>2000 South Colorado Boulevard</div><div>Denver, CO 80222-7900</div></div><div><div>Tele. (720) 540-6800</div><div>(800) 490-4966</div><div>Fax (720) 540-6801</div></div></div>	<div></div>						Sheet Subset: GENNOTES		Subset Sheets: 1 of 2				

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GENERAL NOTES (CON'T.)

39. IT IS ESTIMATED THAT 20 HOURS OF POTHOLING WILL BE REQUIRED FOR THE PROJECT, AND WILL BE PAID UNDER ITEM 203, POTHOLING. THE CONTRACTOR SHALL SUBMIT A POTHOLING PLAN TO THE ENGINEER AT THE PRE-CONSTRUCTION CONFERENCE FOR APPROVAL WHICH DESCRIBES A PLAN FOR POTHOLING ALL EXISTING FACILITIES THAT MAY BE IMPACTED BY CONSTRUCTION.
40. IT IS ANTICIPATED THAT ONE MOBILIZATION WILL BE REQUIRED FOR THIS PROJECT. ONE (1) LUMP SUM (ITEM 626) WILL BE PAID FOR BY THE PROJECT.
41. IT IS THE CONTRACTOR’S RESPONSIBILITY TO VERIFY THE EXISTING CONDITIONS.
42. THE CONTRACTOR MUST REVIEW WORK SITES WITH THE ENGINEER TO ENSURE WETLANDS THAT ARE IDENTIFIED SHALL BE PROTECTED WITH TEMPORARY FENCE. TEMPORARY FENCE WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE WORK.
43. SEVERITY OF POTENTIAL SULFATE EXPOSURE ON THIS PROJECT IS CLASS 3. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL HAVE A CERTIFIED LABORATORY TEST OF THE SUBGRADE AS PER THE CDOT FIELD MATERIAL MANUAL. TESTING SHALL BE AT THE SAME SCHEDULE AND FREQUENCY AS REQUIRED FOR A PRELIMINARY SOIL SURVEY. THE CONTRACTOR MAY PROPOSE A DIFFERENT CLASS OF EXPOSURE FOR THE PROJECT BASED ON THOSE TEST RESULTS.
44. THE CONTRACTOR SHALL COMPLY WITH ARTICLE 1.5 OF TITLE 9, CRS (“EXCAVATION REQUIREMENTS”) WHEN EXCAVATING OR GRADING IS PLANNED IN THE AREA OF UNDERGROUND UTILITY FACILITIES. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITIES AT LEAST TWO (2) BUSINESS DAYS, NOT INCLUDING THE ACTUAL DAY OF NOTICE, PRIOR TO COMMENCING SUCH OPERATIONS. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 811, TO HAVE LOCATIONS OF UNCC REGISTERED LINES MARKED BY MEMBER COMPANIES. ALL OTHER UNDERGROUND FACILITIES SHALL BE LOCATED BY CONTACTING THE RESPECTIVE OWNER. UTILITY SERVICE LATERALS SHALL ALSO BE LOCATED PRIOR TO BEGINNING EXCAVATION OR GRADING. THE CONTRACTOR SHALL LOCATE NON-MEMBER UTILITIES, SUCH AS STORM SEWER AND DITCH FACILITIES AS NECESSARY TO PREVENT DAMAGE THERETO. THE CONTRACTOR SHALL SUBMIT AN IREA ENERGY BUILDERS CALL LINE APPLICATION FOR EVERY IREA ENERGY WORK ELEMENT THAT IS TO BE COORDINATED WITH THE PROJECT.
45. THE CONTRACTOR SHALL PROVIDE ONE FIELD OFFICE (CLASS 2), ONE FIELD LABORATORY (CLASS 2), AND ONE SANITARY FACILITY.
46. ALL REMOVED ITEMS BECOME THE PROPERTY OF THE CONTRACTOR TO BE DISPOSED OF OFF-SITE WITH THE EXCEPTION OF ALL SIGNS, DELINEATORS, SIGNALS, AND ITS EQUIPMENT, WHICH ARE THE PROPERTY OF THE TOWN OF BENNETT AND SHALL BE DELIVERED TO THE TOWN UNDAMAGED. THE CONTRACTOR SHALL CONTACT THE TOWN FOR FURTHER COORDINATION.
47. THE CONTRACTOR SHALL PROTECT ALL MONUMENTS OUTSIDE OF THE CONSTRUCTION LIMITS FROM DAMAGE.
48. SMOOTHNESS CATEFORY FOR THIS PROJECT SHALL BE MRI CATEGORY I.
49. THE CONTRACTOR SHALL USE A STRING LINE FOR ALL HMA PAVING.
50. THE CONTRACTOR SHALL SUBMIT A PAVING SCHEDULE TO THE ENGINEER AT LEAST 5 WORKING DAYS PRIOR TO THE PRE-PAVING CONFERENCE. PAVING SHALL NOT BEGIN UNTIL THE SCHEDULE HAS BEEN ACCEPTED IN WRITING BY THE ENGINEER.
51. THE CONTRACTOR SHALL NOT STOCKPILE MATERIAL OR EQUIPMENT WITHIN 30 FEET OF THE EDGE OF TRAVEL WAY.
52. ADDITIONAL MOBILIZATIONS REQUIRED FOR TEMPORARY STRIPING OPERATIONS WILL NOT BE PAID FOR AND ALL TEMPORARY STRIPING WILL BE PAID AT THE UNIT COST REGARDLESS OF ADDITIONAL MOBILIZATIONS.
53. CONTRACTOR NOT AUTHORIZED TO PERFORM ANY WORK OUTSIDE RIGHT-OF-WAY.
54. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SURVEYING, BOTH LAYOUT AND STAKING OF ALL IMPROVEMENTS FOR APPROVAL BY THE TOWN PRIOR TO INSTALLATION, AND AS-BUILTS OF FINAL INSTALLATIONS. DISCREPANCIES TO THE BASE INFORMATION SHALL BE BROUGHT TO THE TOWN’S ATTENTION FOR A DECISION PRIOR TO COMMENCING WITH THE WORK. NOTIFICATION OF REQUEST FOR FIELD REVIEW SHALL BE MADE A MINIMUM OF 24 HOURS IN ADVANCE. CONSTRUCTION SURVEYING WILL BE PAID FOR UNDER ITEM 625, CONSTRUCTION SURVEYING, ONE (1) LUMP SUM.
55. THIS PROJECT IS NOT SUBJECT TO INCENTIVE/DISINCENTIVE PAYMENTS FOR ASPHALT PAVEMENT OR CONCRETE PAVEMENT.
55. AGGREGATE BASE COURSE CLASS 6 SHALL BE UNDERLAIN BY TWO FEET OF MINIMUM R-19 MATERIAL.
56. RECLAIMED ASPHALT PAVEMENT (RAP), ASPHALT MILLINGS, OR ASPHALT IN ANY FORM WHATSOEVER SHALL NOT BE SUBSTITUTED FOR OR USED IN AGGREGATE BASE COURSE (CLASS 6).
57. EARLY OPENING CLASS P CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE BEING OPENED TO TRAFFIC.
58. DOWEL BARS AND TIE BARS SHALL BE REQUIRED FOR ALL PCCP IN ACCORDANCE WITH M STANDARD M-412-1. DOWEL BARS AND TIE BARS SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
59. SEAL JOINTS WITH AN APPROVED SEALING MATERIAL.
60. DURING SUSPENSION OF WORK, NO TRAFFIC CONTROL INSPECTION DAYS WILL BE PAID.
61. IT IS ESTIMATED THAT 150 DAYS OF PUBLIC INFORMATION MANAGEMENT (TIER IV) WILL BE REQUIRED FOR THIS PROJECT.

62. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL AGENCY(S) NOISE ORDINANCES AND/OR OTHER RESTRICTIONS APPLICABLE TO NIGHTTIME CONSTRUCTION ACTIVITIES FOR PROJECTS WITHIN THE LOCAL MUNICIPAL COVERAGE AREAS. PROJECTS FALLING WITHIN UNINCORPORATED AREAS OF A COUNTY WILL BE GOVERNED BY COUNTY CODE. THE CONTRACTOR SHALL COORDINATE WITH THE LOCAL AGENCY(S) AND/OR CDOT FOR ALL NECESSARY NOISE EXEMPTIONS OR NOTICES, NOISE PERMIT VARIANCES, AND APPROVALS TO DO NIGHT WORK AS REQUIRED. IF LOCAL AGENCY NIGHTTIME NOISE RESTRICTIONS DO NOT EXIST AND THERE ARE NOISE SENSITIVE RECEPTORS IN THE PROJECT AREA, THE APPROVALS TO DO NIGHTTIME WORK SHALL BE APPROVED THROUGH THE CDOT ENGINEER. STANDARD NOISE CONTROLS AND BEST MANAGEMENT PRACTICES FOR REDUCING EQUIPMENT AND CONSTRUCTION ACTIVITY NOISE LEVELS SHALL BE UTILIZED IN ALL CASES AND WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONSISTENTLY EMPLOY WHEN WORKING IN NOISE SENSITIVE AREAS AFTER 7:00 P.M. FOR THIS PROJECT, THE CONTRACTOR IS REQUIRED TO REVIEW AND UNDERSTAND ALL LOCAL AGENCY ORDINANCES WITH PROJECT APPLICABLE NIGHT RESTRICTIONS. WHEN CONDITIONS APPLY, THE CONTRACTOR SHALL SUBMIT A NIGHTTIME NOISE ORDINANCE MEMORANDUM(S) TO ALL JURISDICTIONAL LOCAL AUTHORITIES. THIS MEMORANDUM SHALL REQUEST CONSTRUCTION NOISE EXEMPTIONS FOR NIGHT WORK OPERATIONS (AT LEAST TWO WEEKS PRIOR TO THE PROPOSED NIGHT WORK START DATE) WHERE CONSTRUCTION WORK IS SCHEDULED BETWEEN THE HOURS OF 7:00 P.M. AND 7:00 A.M. THE FOLLOWING INFORMATION SHOULD BE INCLUDED IN THE EXEMPTION REQUEST SUBMITTALS AND SENT TO THE CITY/COUNTY ENGINEER: (1) REQUESTING ENTITY, (2) CONTACT PERSON AND PHONE NUMBER, (3) LOCATION OF THE WORK, (4) REASONS NIGHT WORK IS BEING REQUESTED, (5) TYPE OF ACTIVITIES PROPOSED TO OCCUR AT NIGHT, (6) EQUIPMENT PROPOSED TO BE USED AT NIGHT, (7) START AND END DATE PROPOSED, (8) TOTAL NUMBER OF NIGHTS WORK IS PROPOSED TO OCCUR. ALL NIGHTTIME CONSTRUCTION ACTIVITIES SUBJECT TO NOISE LEVEL RESTRICTIONS CANNOT BEGIN UNTIL THE NECESSARY DOCUMENTATION AND NOTIFICATIONS HAVE BEEN APPROVED BY THE LOCAL AGENCY AUTHORITY, THE CDOT ENGINEER AND/OR THE REGION'S NOISE SPECIALIST. ALL EXEMPTION REQUESTS AND PERMITTING REQUIREMENTS WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE WORK.

ENVIRONMENTAL NOTES:

1. TREE TRIMMING/REMOVAL
TREE TRIMMING AND/OR REMOVAL ACTIVITIES SHALL BE COMPLETED BEFORE BIRDS BEGIN TO NEST OR AFTER THE YOUNG HAVE FLEDGED. IN COLORADO, MOST NESTING AND REARING ACTIVITIES OCCUR BETWEEN APRIL 1 AND AUGUST HOWEVER, SINCE SOME BIRDS NEST AS EARLY AS FEBRUARY, A NESTING BIRD SURVEY SHALL BE CONDUCTED BY A BIOLOGIST BEFORE ANY TREE TRIMMING OR REMOVAL ACTIVITIES BEGIN.
2. CLEARING/GRUBBING ACTIVITIES
CLEARING AND GRUBBING OF VEGETATION THAT MAY DISTURB GROUND NESTING BIRDS SHALL BE COMPLETED BEFORE BIRDS BEGIN TO NEST OR AFTER THE YOUNG HAVE FLEDGED. IF WORK ACTIVITIES ARE PLANNED BETWEEN APRIL 1 AND AUGUST 31, VEGETATION SHALL BE REMOVED AND/OR TRIMMED TO A HEIGHT OF SIX (6) INCHES OR LESS PRIOR TO APRIL 1. ONCE VEGETATION HAS BEEN REMOVED AND/OR TRIMMED, APPROPRIATE MEASURES, I.E. REPEATED MOWING/TRIMMING, SHALL BE IMPLEMENTED TO ASSURE VEGETATION DOES NOT GROW MORE THAN SIX (6) INCHES. FAILURE TO MAINTAIN VEGETATION HEIGHT OF SIX (6) INCHES OR LESS MAY POSTPONE PROJECT CONSTRUCTION.
3. BIRDS OF PREY:
A NEST SURVEY MUST BE CONDUCTED SEVEN (7) DAYS PRIOR TO CONSTRUCTION. IF ANY RAPTORS/NESTS ARE OBSERVED THEN COLORADO PARKS AND WILDLIFE MUST BE CONTACTED AND THEIR GUIDELINES FOLLOWED.
4. IN THE EVENT THAT SUSPECTED ASBESTOS CONTAINING MATERIAL (ACM) IS ENCOUNTERED, INCLUDING WITH BURIED UTILITIES, THE CONTRACTOR WILL FOLLOW CDOT SPECIFICATION 250.07 – ASBESTOS-CONTAINING MATERIAL MANAGEMENT, AS WELL AS CDOT REGULATED ASBESTOS-CONTAMINATED SOIL MANAGEMENT STANDARD OPERATING PROCEDURE. ADDITIONALLY, DEPENDING ON THE TYPE OF ACM, THIS MATERIAL MUST ALSO BE ABATED IN ACCORDANCE WITH EITHER SECTION 5.5 OF THE SOLID WASTE REGULATIONS, OR REGULATION NO. 8 OF THE AIR QUALITY CONTROL COMMISSION REGULATIONS.
5. ALTHOUGH ENCOUNTERING IMPACTED SOIL OR GROUNDWATER IS NOT EXPECTED, WORKERS SHALL BE ALERT DURING EXCAVATION FOR ANY VISUAL OR OLFACTORY SIGNS OF CONTAMINATION. IF IMPACTED SOIL AND/OR GROUNDWATER IS ENCOUNTERED, WORK WILL STOP IMMEDIATELY AND THE PROCEDURES OUTLINED IN THE COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) SPECIFICATION 250 – ENVIRONMENTAL HEALTH AND SAFETY MANAGEMENT SHALL BE FOLLOWED.
6. THE CONTRACTOR SHALL CONTROL FUGITIVE DUST THROUGH IMPLEMENTATION OF SECTIONS 107.24, 209, AND 250 OF CDOT’S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND THE AIR POLLUTION CONTROL DIVISION’S AIR POLLUTANT EMISSION NOTIFICATION (APEN) REQUIREMENTS.

THE FOLLOWING BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED DURING CONSTRUCTION:

- MAINTAIN ENGINES AND EXHAUST SYSTEMS ON CONSTRUCTION EQUIPMENT AND VEHICLES IN GOOD WORKING ORDER. PROHIBIT TAMPERING WITH EQUIPMENT TO INCREASE HORSEPOWER OR DISABLING EMISSION CONTROL DEVICES. EQUIPMENT IS SUBJECT TO INSPECTION BY THE PROJECT MANAGER TO ENSURE MAINTENANCE IS CONDUCTED REGULARLY.
 - PROHIBIT UNNECESSARY IDLING OF CONSTRUCTION EQUIPMENT AND VEHICLES.
 - LOCATE STAGING AREAS AND STATIONARY CONSTRUCTION EQUIPMENT/DIESEL ENGINES AS FAR AS POSSIBLE FROM RESIDENCES AND OTHER SENSITIVE RECEPTORS.
 - COVER, WET, COMPACT, OR CHEMICAL STABILIZATION TO CONTROL DUST FROM DISTURBED AREAS AND EXCAVATED MATERIALS DURING CONSTRUCTION. MINIMIZE DISTURBED AREAS, PARTICULARLY DURING DRY WEATHER CONDITIONS, AND USE WIND BARRIERS AS APPROPRIATE.
 - EMPLOY WHEEL WASH STATIONS AT POINTS OF INGRESS/EGRESS. USE STREET SWEEPERS TO REMOVE SOIL TRACKED ONTO ADJACENT ROADWAYS.
8. IF PALEONTOLOGICAL OR ARCHAEOLOGICAL/CULTURAL RESOURCES ARE UNCOVERED DURING PROJECT CONSTRUCTION, WORK IN THE IMMEDIATE AREA OF THE FIND SHALL CEASE, AND EITHER THE CDOT HQ PALEONTOLOGIST (NICOLE PEAVEY: 303.757.9632, NICOLE.PEAVEY@STATE.CO.US) OR THE CDOT HQ ARCHAEOLOGIST (GREG WOLFF: 303.757.9158, GREG.WOLFF@STATE.CO.US) SHALL BE NOTIFIED AS SOON AS POSSIBLE PER SECTION 107.23 OF THE STANDARD SPECIFICATIONS.

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Unit Information Unit Leader Initials						Revised:		Detailer: M. WAGNER		Numbers		
<div><div></div><div>Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 6000 2000 South Colorado Boulevard Denver, CO 80222-7900</div><div>Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801</div></div>						Void:		Sheet Subset: GENNOTES		Subset Sheets: 2 of 2		Sheet Number 7



town of

Bennett

welcome neighbors.

TOWN OF BENNETT

207 MUEGGE WAY

BENNETT, CO 80102

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INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	Roadway				PROJECT TOTALS	
BOOK	PAGE	SHEET				PLAN	AS CONST.			PLAN	AS CONST.
			201-00001	Clearing and Grubbing	ACRE	0.64				0.64	
			202-00010	Removal of Tree	EACH	2				2	
			202-00090	Removal of Delineator	EACH	10				10	
			202-00210	Removal of Concrete Pavement	SY	1,644				1,644	
			202-00220	Removal of Asphalt Mat	SY	1,634				1,634	
			202-00700	Removal of Light Standard	EACH	2				2	
			202-00810	Removal of Ground Sign	EACH	5				5	
			202-00821	Removal of Sign Panel	EACH	1				1	
			202-01130	Removal of Guardrail Type 3	LF	330				330	
			202-04002	Clean Culvert	EACH	5				5	
			203-00010	Unclassified Excavation (Complete In Place)	CY	2,241				2,241	
			203-01597	Potholing	HOURL	20				20	
			207-00700	Topsoil (Onsite)	CY	485				485	
			207-00704	Subgrade Soil Preparation	SY	2,909				2,909	
			208-00002	Erosion Log Type 1 (12 Inch)	LF	300				300	
			208-00020	Silt Fence	LF	1,800				1,800	
			208-00046	Pre-fabricated Concrete Washout Structure (Type 1)	EACH	1				1	
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			208-00103	Removal and Disposal of Sediment (Labor)	HOURL	8				8	
			208-00105	Removal and Disposal of Sediment (Equipment)	HOURL	8				8	
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			210-00810	Reset Ground Sign	EACH	13				13	
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			210-04020	Modify Inlet	EACH	1				1	
			212-00706	Seeding (Native) Drill	ACRE	1.50				1.50	
			213-00002	Mulching (Weed Free Hay)	ACRE	0.80				0.80	
			213-00061	Mulch Tackifier	LB	162				162	
			216-00201	Soil Retention Blanket (Straw-Coconut) (Biodegradable Class 1)	SY	3,365				3,365	
			217-00020	Herbicide Treatment	HOURL	8				8	
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Detailer:	M. WAGNER		
Sheet Subset:	SOAQ	Subset Sheets:	1 of 4

Project No./Code
STU 0704-248
23180
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INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	Roadway				PROJECT TOTALS	
BOOK	PAGE	SHEET				PLAN	AS CONST.			PLAN	AS CONST.
			304-06000	Aggregate Base Course (Class 6)	TON	1,097				1,097	
			403-00721	Hot Mix Asphalt (Patching) (Asphalt)	SY	200				200	
			403-33841	Hot Mix Asphalt (Grading S) (100) (PG 64-22)	TON	496				496	
			403-34871	Hot Mix Asphalt (Grading SX) (100) (PG 76-28)	TON	165				165	
			412-00850	Concrete Pavement (8-1/2 Inch)	SY	2,113				2,113	
			503-00036	Drilled Shaft (36 Inch)	LF	57				57	
			603-01240	24 Inch Reinforced Concrete Pipe	LF	30				30	
			604-00305	Inlet Type C (5 Foot)	EACH	1				1	
			606-00302	Guardrail Type 3 (31 Inch Midwest Guardrail System)	LF	188				188	
			606-02003	End Anchorage (Nonflared)	EACH	2				2	
			612-00001	Delineator (Type I)	EACH	5				5	
			612-00003	Delineator (Type III)	EACH	1				1	
			612-00041	Delineator (Flexible) (Type I)	EACH	4				4	
			613-00206	2 Inch Electrical Conduit (Bored)	LF	355				355	
			613-00306	3 Inch Electrical Conduit (Bored)	LF	370				370	
			613-01200	2 Inch Electrical Conduit (Plastic)	LF	55				55	
			613-01300	3 Inch Electrical Conduit (Plastic)	LF	70				70	
			613-07004	Type Four Pull Box	EACH	3				3	
			613-07005	Type Five Pull Box	EACH	1				1	
			613-10000	Wiring	L S	1				1	
			613-13000	Luminaire (LED) (Special)	EACH	3				3	
			613-80130	Service Meter Cabinet	EACH	1				1	
			614-00011	Sign Panel (Class I)	SF	18				18	
			614-00012	Sign Panel (Class II)	SF	37				37	
			614-00029	Sign Panel (Class II) (Install Only)	EACH	1				1	
			614-01573	Steel Sign Support (2-1/2 Inch Round NP-40)(Post & Slipbase)	EACH	2				2	
			614-70024	1310nm SFP Optic Module	EACH	2				2	
			614-70336	Traffic Signal Face (12-12-12)	EACH	11				11	
			614-72836	Conflict Monitor	EACH	1				1	
			614-72855	Traffic Signal Controller Cabinet	EACH	1				1	

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Unit Information	Unit Leader Initials
<div><div> Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 6000 2000 South Colorado Boulevard Denver, CO 80222-7900</div><div>Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801</div></div>	

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welcome neighbors.

TOWN OF BENNETT
207 MUEGGE WAY
BENNETT, CO 80102
TELE. (303) 644-3249
FAX (303) 644-4125

As Constructed	SUMMARY OF APPROXIMATE QUANTITIES			Project No./Code
No Revisions:				STU 0704-248
Revised:	Designer: A. MARQUEZ	Structure Numbers		23180
Void:	Detailer: M. WAGNER			
	Sheet Subset: SOAQ	Subset Sheets: 2 of 4		Sheet Number 9

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INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	Roadway				PROJECT TOTALS	
BOOK	PAGE	SHEET				PLAN	AS CONST.			PLAN	AS CONST.
			614-72866	Fire Preemption Unit and Timer	EACH	3				3	
			614-72887	Microwave Vehicle Radar Detector	EACH	4				4	
			614-81145	Traffic Signal-Light Pole Steel (1-45 Foot Mast Arm)	EACH	3				3	
			614-86248	Traffic Signal Controller (Type 2070LC)	EACH	1				1	
			614-86800	Uninterrupted Power Supply	EACH	1				1	
			614-87010	Fiber Optic Cable (Single Mode) (12 Fiber)	LF	1490				1490	
			614-87012	Fiber Optic Termination Panel (12 Fiber)	EACH	1				1	
			614-87015	Buffer Tube Fan Out Kit	EACH	1				1	
			614-87320	Closed Circuit Television	EACH	1				1	
			614-87350	Test Fiber Optic Cable	L S	1				1	
			614-87512	Splice Fiber Optic Cable (12 Strand)	EACH	1				1	
			614-87692	Ethernet Switch Type II	EACH	1				1	
			620-00002	Field Office (Class 2)	EACH	1				1	
			620-00012	Field Laboratory (Class 2)	EACH	1				1	
			620-00020	Sanitary Facility	EACH	1				1	
			625-00000	Construction Surveying	L S	1				1	
			626-00000	Mobilization	L S	1				1	
			626-01114	Public Information Management (Tier IV)	DAY	150				150	
			627-00008	Modified Epoxy Pavement Marking	GAL	13				13	
			627-30405	Preformed Thermoplastic Pavement Marking (Word- Symbol)	SF	73				73	
			627-30410	Preformed Thermoplastic Pavement Marking (Xwalk-Stop Line)	SF	157				157	
			630-00000	Flagging	HOUR	640				640	
			630-00003	Uniformed Traffic Control	HOUR	640				640	
			630-00006	Uniformed Traffic Control (Vehicle)	HOUR	640				640	
			630-00007	Traffic Control Inspection	DAY	35				35	
			630-00012	Traffic Control Management	DAY	80				80	
			630-80336	Barricade (Type 3 M-B) (Temporary)	EACH	8				8	
			630-80341	Construction Traffic Sign (Panel Size A)	EACH	42				42	
			630-80342	Construction Traffic Sign (Panel Size B)	EACH	17				17	
			630-80355	Portable Message Sign Panel	EACH	6				6	

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As Constructed
No Revisions:
Revised:
Void:

SUMMARY OF APPROXIMATE QUANTITIES			
Designer:	A. MARQUEZ	Structure Numbers	
Detailer:	M. WAGNER		
Sheet Subset:	SOAQ	Subset Sheets:	3 of 4

Project No./Code
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23180
Sheet Number 10

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INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	Roadway				PROJECT TOTALS	
BOOK	PAGE	SHEET				PLAN	AS CONST.			PLAN	AS CONST.
			630-80360	Drum Channelizing Device	EACH	100				100	
			630-80380	Traffic Cone	EACH	50				50	
			630-80393	Stackable Vertical Panels	EACH	50				50	
			630-85041	Mobile Attenuator	DAY	80				80	
			700-70010	F/A Minor Contract Revisions	F A	1				1	
			700-70016	F/A Fuel Cost Adjustment	F A	1				1	
			700-70380	F/A Erosion Control	F A	1				1	
			700-70589	F/A Environmental Health & Safety Management	F A	1				1	

Print Date: 4/1/22

File Name: I70-SH79_SOAQ.DWG


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Unit Information Unit Leader Initials


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SUMMARY OF APPROXIMATE QUANTITIES			
Designer:	A. MARQUEZ	Structure Numbers	
Detailer:	M. WAGNER		
Sheet Subset:	SOAQ	Subset Sheets:	4 of 4

Project No./Code
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23180
Sheet Number 11

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SUMMARY OF EARTHWORK QUANTITIES			
FOR PAY QUANTITY			
<u>UNCLASSIFIED EXCAVATION (COMPLETE IN PLACE)</u>		<u>CUBIC YARDS</u>	
SH 79		354	BCY
I-70 Off-Ramp		1,303	BCY
I-70 On-Ramp		584	BCY
TOTAL FOR PAY QUANTITY		2,241	BCY
FOR INFORMATION ONLY			
<u>EARTHWORK QUANTITIES BALANCE</u>			
<u>EMBANKMENT MATERIAL (COMPLETE IN PLACE)</u>		<u>CUBIC YARDS</u>	
SH 79		38	CCY
I-70 Off-Ramp		723	CCY
I-70 On-Ramp		67	BCY
TOTAL		828	CCY
<u>WASTE</u>			
EXCAVATED MATERIAL TO BE DISPOSED OF BY CONTRACTOR		TOTAL	1,413 BCY
<u>COMPACTION (AASHTO T 99)</u>		<u>CUBIC YARDS</u>	
BASES OF CUTS AND FILLS (8")		TOTAL	1,410 CCY
<u>WATER FOR COMPACTION (0.04 MGAL/CUBIC YARD)</u>		<u>CUBIC YARDS</u>	
TOTAL		56	MGAL

BCY - BANK CUBIC YARD - ONE CUBIC YARD OF MATERIAL AS IT LIES IN THE NATURAL STATE
CCY - COMPACTED CUBIC YARD - ONE CUBIC YARD OF MATERIAL AFTER IT HAS BEEN COMPACTED TO SPECIFICATION.

TABULATION OF REMOVALS, RESETS AND ADJUSTMENTS													
STATION TO STATION	SIDE	201-00001	202-00010	202-00090	202-00210	202-00220	202-00700	202-00810	202-00821	202-01130	210-00810	210-01011	210-04020
		Clearing and Grubbing	Removal of Tree	Removal of Delineator	Removal of Concrete Pavement	Removal of Asphalt Mat	Removal of Light Standard	Removal of Ground Sign	Removal of Sign Panel	Removal of Guardrail Type 3	Reset Ground Sign	Reset Gate	Modify Inlet
		ACRE	EACH	EACH	SY	SY	EACH	EACH	EACH	LF	EACH	EACH	EACH
I-70 Off Ramp													
18+35.68 to 23+01.58	Rt. & Lt.				1247								
18+35.68 to 24+06.81	Rt & Lt.	0.53											
18+43.11	Rt.							1					
19+37.64	Lt.			1									
19+95.17	Lt.			1									
20+12.00	Rt. & Lt.										2		
20+94.75	Rt.												1
21+08.12	Lt.			1									
21+29.97 to 21+46.51	Rt. & Lt.					42							
21+45.32	Rt.								1		1		
21+48.00	Rt. & Lt.										2		
22+04.43	Lt.										1		
22+37 to 22+45	Rt.		2										
22+66.34	Lt.			1									
22+94.19	Lt.			1									
23+64.07	Rt.						1						
23+71.42	Rt.							2					
23+72.00	Rt. & Lt.										2		
23+75.17	Lt.							2					
SH 79													
102+74.67 to 105+30.36	Rt. & Lt.					1592							
103+77	Lt.			1									
104+33	Lt.			1									
104+34.09 to 105+14.45	Lt.									139			
104+44.21 to 105+14.77	Rt.									191			
104+81	Lt.			1									
105+20.39	Lt.										1		
I-70 On Ramp													
50+00.00 to 51+68.88	Rt. & Lt.	0.11											
50+26.45 to 51+68.88	Rt. & Lt.				397								
50+39.73	Lt.			1									
50+43.07	Lt.										1		
50+50.30	Lt.										1		
50+60.73	Lt.			1									
50+64.14	Rt.						1						
50+72.00	Rt. & Lt.										2		
50+75.74 to 50+77.02	Rt. & Lt.											1	
PROJECT TOTALS		0.64	2	10	1,644	1,634	2	5	1	330	13	1	1

TABULATION OF SIGNS										
PAY ITEM								614-00012	614-01573	COMMENTS
SIGN NUMBER	SIGN CODE	LEGEND	BACKGROUND COLOR	STATION	LT/RT	TRAVEL DIRECTION	DIMENSION	SIGN PANEL (CLASS II)	STEEL SIGN SUPPORT (2-1/2 INCH ROUND NP-40) (POST & SLIPBASE)	
								SF	EACH	
1	W13-2	"EXIT 45 MPH"	YELLOW	3+87.5	RT	EB	36"x48"	12.00	1	
2	W13-3	"RAMP 45 MPH"	YELLOW	15+49.43	RT	WB	48"x48"	16.00		
3	W3-3	SIGNAL	YELLOW	18+43.11	RT	EB	36"x36"	9.00	1	
PROJECT TOTALS								37.00	2	

Print Date: 3/29/22	<div><div></div><div></div><div></div><div></div></div>	Sheet Revisions			<div><p>TOWN OF BENNETT 207 MUEGGE WAY BENNETT, CO 80102 TELE. (303) 644-3249 FAX (303) 644-4125</p><p>welcome neighbors.</p></div>	As Constructed	TABULATIONS				Project No./Code
File Name: I70-SH79_TABULATIONS.DWG		Date:	Comments	Init.		No Revisions:	STU 0704-248				
Horiz. Scale: 0.5:1 Vert. Scale: As Noted						Revised:	Designer: A. MARQUEZ	Structure Numbers	23180		Sheet Number 12
Unit Information Unit Leader Initials						Void:	Detailer: M. WAGNER				
<div><p>Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 6000 2000 South Colorado Boulevard Denver, CO 80222-7900</p></div> <p>Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801</p>							Sheet Subset: TABS	Subset Sheets: 1 of 2			

TABULATION OF GUARDRAIL				
Station (SH 79)		Side	606-00302	606-02003
			Guardrail Type 3 (31 in MGS)	End Anchorage (Non-Flared)
From	To		LF	EACH
104+16.20	105+30.05	LT	93.75	1
104+39.52	105+29.14	RT	93.75	1
Project Totals			187.50	2

TABULATION OF DRAINAGE STRUCTURES				
STATION TO STATION		SIDE	603-01240	604-00305
			24 Inch Reinforced Concrete Pipe	Inlet Type C (5 Foot)
			LF	EACH
I-70 Off-Ramp				
20+94.75 to 22+11.71	Rt.	30		
22+11.71	Rt.			1
PROJECT TOTAL		30		1

SUMMARY OF STRIPING			
PAY ITEM	627-00008	627-30405	627-30210
COLOR	MODIFIED EPOXY PAVEMENT MARKING	PREFORMED THERMOPLASTIC PAVEMENT MARKING (WORD-SYMBOL)	THERMOPLASTIC PAVEMENT MARKING (X-WALK-STOP LINE)
	GAL	SF	SF
WHITE	11	73	157
YELLOW	2		
PROJECT TOTALS	13	73	157

NOTES:

1. APPLICATION RATE FOR EPOXY PAVEMENT MARKING IS ESTIMATED AT 85 SQ FT PER GALLON.
2. APPLICATION RATE FOR PAVEMENT MARKING PAINT (WATERBORNE) IS ESTIMATED AT 90 SQ FT PER GALLON.
3. SEE STRIPING PLANS FOR DETAILS.

TABULATION OF STRIPING					
PAY ITEM		627-00008		627-30405	627-30410
STATION TO STATION	SIDE	MODIFIED EPOXY PAVEMENT MARKING		PREFORMED THERMOPLASTIC PAVEMENT MARKING (WORD-SYMBOL)	PREFORMED THERMOPLASTIC PAVEMENT MARKING (XWALK-STOPLINE)
		CENTER LINE DOUBLE YELLOW, 4 INCH	EDGE LINE, SOLID WHITE 6 INCH	RAMP PAVEMENT ARROW	STOP BAR WHITE 2' WIDE
		SF	SF	SF	SF
I-70 Off-Ramp					
20+03.00	Lt.			24.3	
21+40.00	Lt.			24.3	
23+60.00	Lt.			24.3	
18+35.68 to 24+08.81	Rt. & Lt.		650		
23+82.09	Rt. & Lt.				96
SH 79					
102+74.67 to 103+59.21	Rt. & Lt.	56			
103+59.21	Rt.				37
104+54.11	Lt.				24
104+54.11 to 105+30.36	Rt. & Lt.	51			
I-70 On-Ramp					
50+00.00 to 51+68.88	Rt. & Lt.		241		
PROJECT TOTAL (SF)		107	890	73	157

SIGN CODE	LEGEND	DIMENSIONS	PANEL SIZE		
			A	B	C
R52-6a	"BEGIN FINES DOUBLE IN WORK ZONE"	36"x48"		3	
W20-1	"ROAD WORK AHEAD"	36"x36"	3		
G20-11	"ROAD WORK MM YY MM YY FOR INFORMATION XXX-XXX-XXX"	48"x48"		3	
W20-4	"ONE LANE ROAD XX FT"	36"x36"	2		
W20-7	FLAGGER	36"x36"	3		
R52-6b	"END FINES DOUBLE IN WORK ZONE"	36"x48"		4	
G20-10	"XYZ CONSTRUCTION THANKS YOU"	48"x48"		4	
W20-2	"DETOUR AHEAD"	36"x36"	3		
M4-10	"DETOUR"	48"x18"	2		
R11-2	"ROAD CLOSED"	48"x30"	1		
E5-2a	"EXIT CLOSED"	48"x36"		2	
M1-1	"INTERSTATE 70"	36"x36"	7		
M4-8	"DETOUR"	24"x12"	7		
M6-1	Left Arrow Symbol	21"x15"	2		
M6-1	Right Arrow Symbol	21"x15"	2		
M3-3	"EAST"	24"x12"	7		
M4-9r	"DETOUR"	48"x36"		1	
M4-9l	"DETOUR"	30"x24"	3		
PROJECT TOTALS ⁽²⁾			42	17	

(1) TTC Sign Totals are estimates only, Contractor is responsible for Traffic Control Plan

(2) Sign Totals are estimated based on typical application of CDOT M&S Standard Plan S-630-1, Case No. 19 and Case No. 20, Case No. 23, and I-70 EB Ramp Closure Detour (See Page 29)

(1) TTC Sign Totals are estimates only. Contractor is responsible for Traffic Control Plan
(2) Sign Totals are estimated based on typical application of CDOT M&S Standard Plan S-630-1, Case No. 19 and Case No. 20, Case No. 23, and I-70 EB Ramp Closure Detour (See Page 29)

DELINEATOR SUMMARY					
STATION⁽¹⁾	SIDE	612-00001		612-00003	612-00041
		Delineator (Type I)		Delineator (Type 3)	Delineator (Flexible) (Type 1)
		Crystal	Yellow	Yellow	Yellow
		EACH	EACH	EACH	EACH
I-70 Off Ramp					
19+37.96	LT		1		
20+36.63	LT		1		
21+36.40	LT		1		
22+37.98	LT		1		
23+60.41	LT			1	
SH 79					
103+74.14	LT	1			
104+24.63	LT				1
104+48.17	LT				1
I-70 On Ramp					
50+50.99	LT				1
50+74.87	LT				1
PROJECT TOTALS		5		1	4

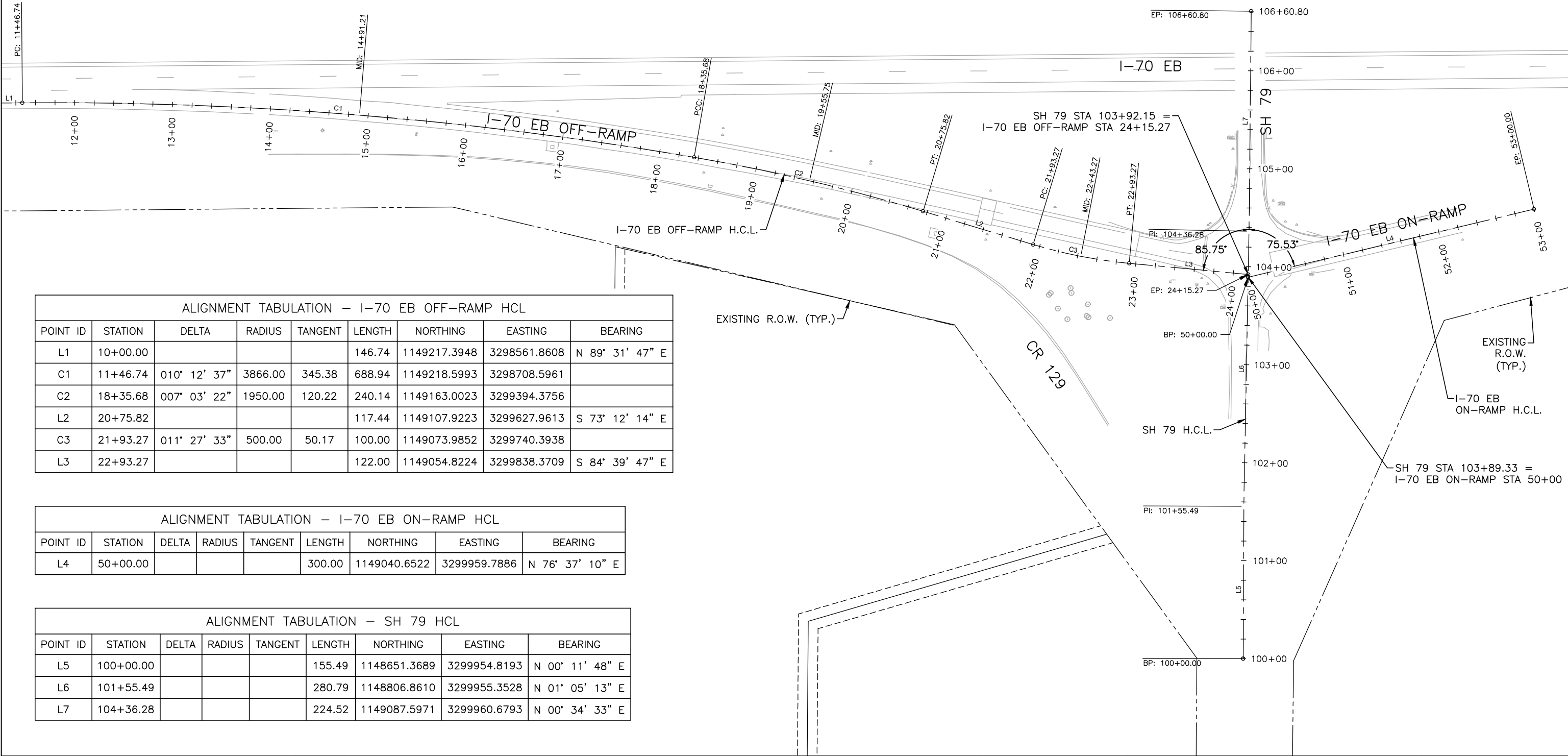
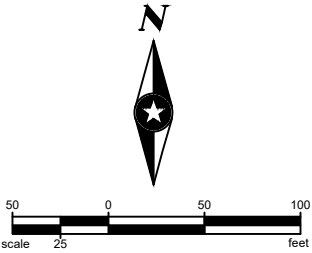
(1) Locations are approximate. Refer to Standard Plan S-612-1 for locations/layout of delineators.

(1) Locations are approximate. Refer to Standard Plan S-612-1 for locations/layout of delineators.

TEMPORARY TRAFFIC CONTROL SUMMARY			
ITEM NO.	ITEM	UNIT	PROJECT TOTALS ⁽¹⁾
630-00000	FLAGGING	HOUR	640
630-00003	UNIFORMED TRAFFIC CONTROL	HOUR	640
630-00006	UNIFORMED TRAFFIC CONTROL (VEHICLE)	HOUR	640
630-00007	TRAFFIC CONTROL INSPECTION	DAY	35
630-00012	TRAFFIC CONTROL MANAGEMENT	DAY	80
630-80336	BARRICADE (TYPE 3 M-B) (TEMPORARY)	EACH	8
630-80341	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE A)	EACH	42
630-80342	CONSTRUCTION TRAFFIC SIGN (PANEL SIZE B)	EACH	17
630-80355	PORTABLE MESSAGE SIGN PANEL	EACH	6
630-80360	DRUM CHANNELIZING DEVICE	EACH	100
630-80380	TRAFFIC CONE	EACH	50
630-80393	STACKABLE VERTICAL PANELS	EACH	50
630-85041	MOBILE ATTENUATOR	DAY	80

(1) TTC estimates assume one active closure at a time.

Print Date: 3/29/22		 <div> TOWN OF BENNETT 207 MUEGGE WAY BENNETT, CO 80102 TELE. (303) 644-3249 FAX (303) 644-4125 </div>		As Constructed		TABULATIONS		Project No./Code	
File Name: I70-SH79_TABULATIONS.DWG				No Revisions:				STU 0704-248	
Horiz. Scale: 0.5:1 Vert. Scale: As Noted				Revised:		Designer: A. MARQUEZ	Structure	23180	
Unit Information Unit Leader Initials				Void:		Detailer: M. WAGNER	Numbers	Sheet Number 13	
 <div> Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 8000 2000 South Colorado Boulevard Denver, CO 80222-7900 </div> <div> Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801 </div>									



ALIGNMENT TABULATION – I-70 EB OFF-RAMP HCL								
POINT ID	STATION	DELTA	RADIUS	TANGENT	LENGTH	NORTHING	EASTING	BEARING
L1	10+00.00				146.74	1149217.3948	3298561.8608	N 89° 31' 47" E
C1	11+46.74	010° 12' 37"	3866.00	345.38	688.94	1149218.5993	3298708.5961	
C2	18+35.68	007° 03' 22"	1950.00	120.22	240.14	1149163.0023	3299394.3756	
L2	20+75.82				117.44	1149107.9223	3299627.9613	S 73° 12' 14" E
C3	21+93.27	011° 27' 33"	500.00	50.17	100.00	1149073.9852	3299740.3938	
L3	22+93.27				122.00	1149054.8224	3299838.3709	S 84° 39' 47" E

ALIGNMENT TABULATION – I-70 EB ON-RAMP HCL								
POINT ID	STATION	DELTA	RADIUS	TANGENT	LENGTH	NORTHING	EASTING	BEARING
L4	50+00.00				300.00	1149040.6522	3299959.7886	N 76° 37' 10" E

ALIGNMENT TABULATION – SH 79 HCL								
POINT ID	STATION	DELTA	RADIUS	TANGENT	LENGTH	NORTHING	EASTING	BEARING
L5	100+00.00				155.49	1148651.3689	3299954.8193	N 00° 11' 48" E
L6	101+55.49				280.79	1148806.8610	3299955.3528	N 01° 05' 13" E
L7	104+36.28				224.52	1149087.5971	3299960.6793	N 00° 34' 33" E

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 TOWN OF BENNETT
207 MUEGGE WAY
BENNETT, CO 80102
TELE. (303) 644-3249
FAX (303) 644-4125


As Constructed

No Revisions:

Revised:

Void:

ALIGNMENT CONTROL PLAN

Designer: A. MARQUEZ

Detailer: K. KULESZA

Sheet Subset: ALIGN

Structure Numbers

Subset Sheets: 1 of 1

Project No./Code

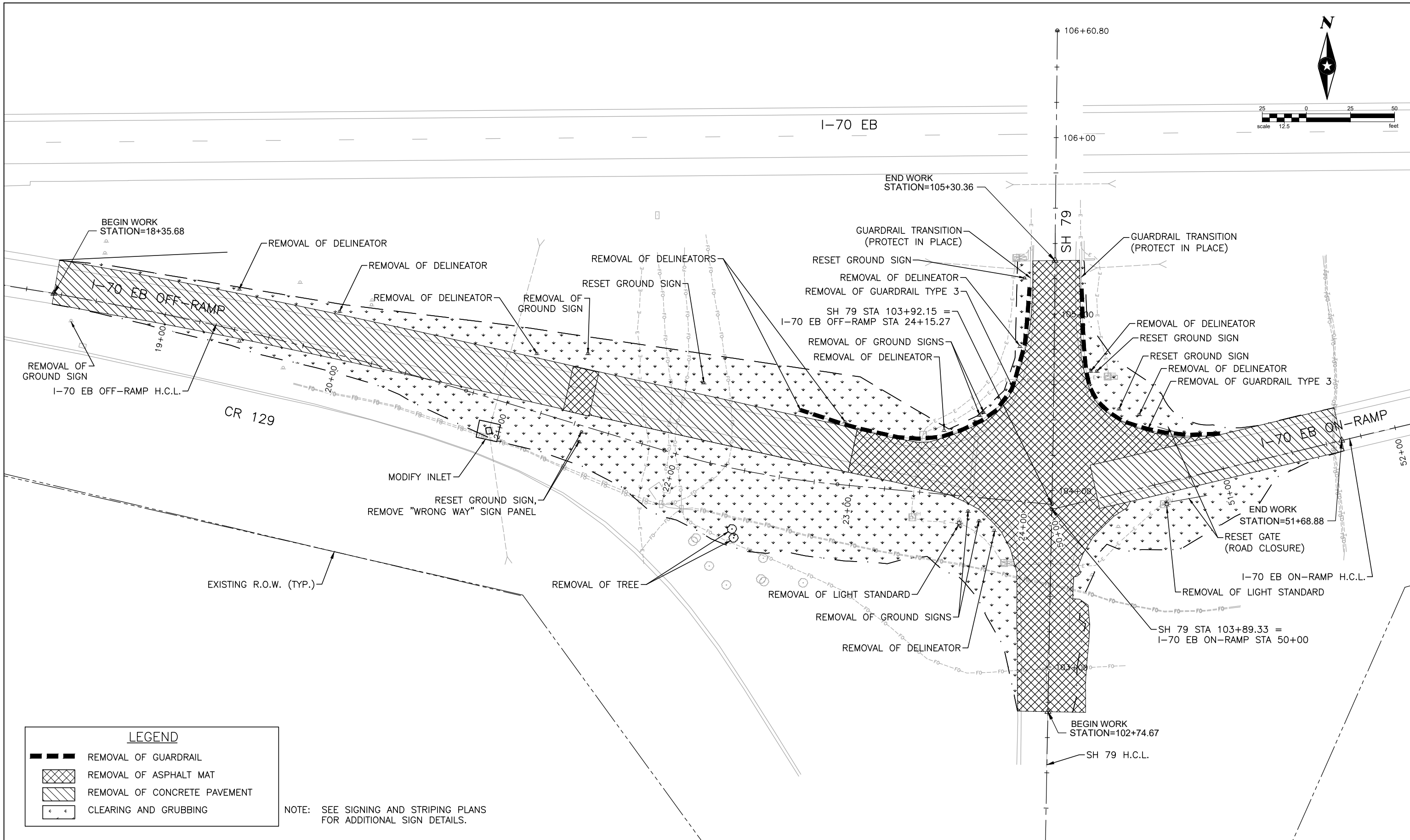
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23180

Sheet Number 14


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Print Date: 3/29/22	
File Name: I70-SH79_REMOVAL PLAN.DWG	
Horiz. Scale: 0.5:1	Vert. Scale: As Noted
Unit Information	Unit Leader Initials
 Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 6000 2000 South Colorado Boulevard Denver, CO 80222-7900	
Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801	

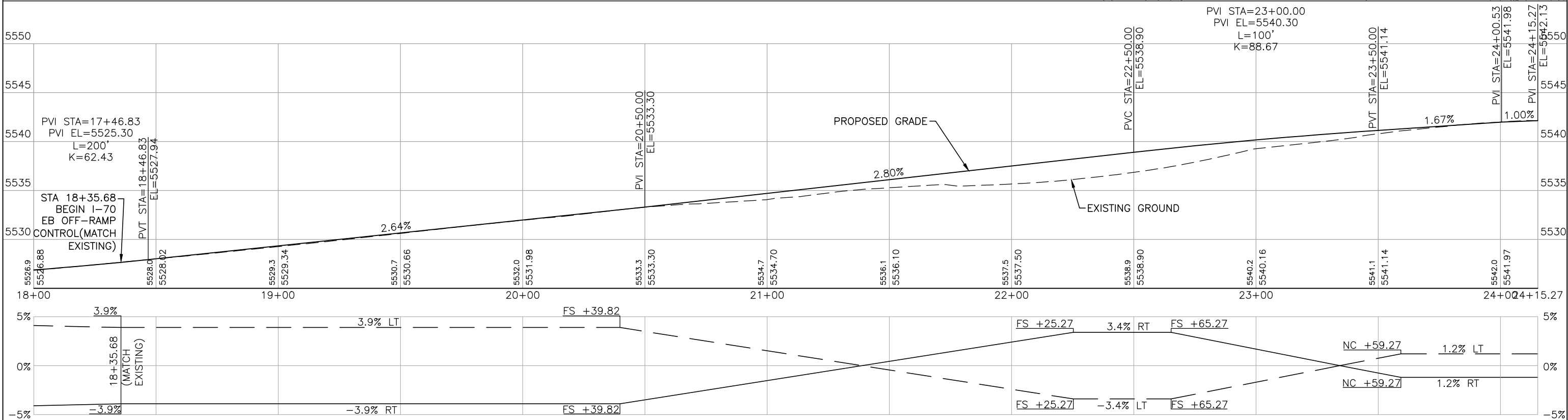
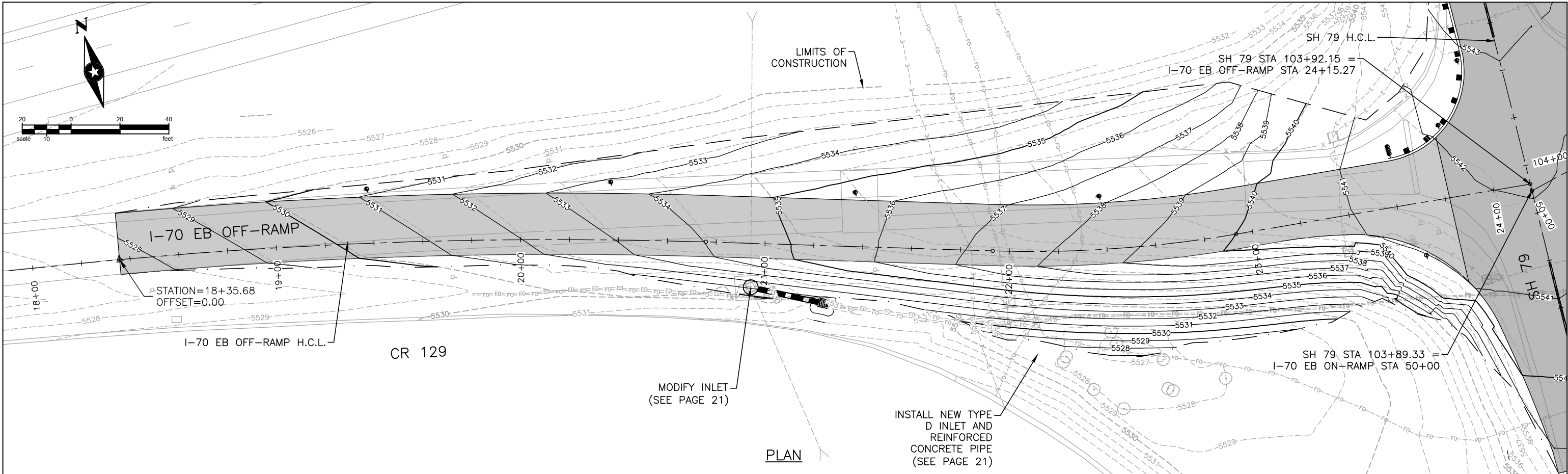
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welcome neighbors.

As Constructed		REMOVAL PLAN		Project No./Code
No Revisions:				STU 0704-248
Revised:		Designer: A. MARQUEZ	Structure Numbers	23180
Void:		Detailer: K. KULESZA		
		Sheet Subset: REMOVAL	Subset Sheets: 1 of 1	Sheet Number 15

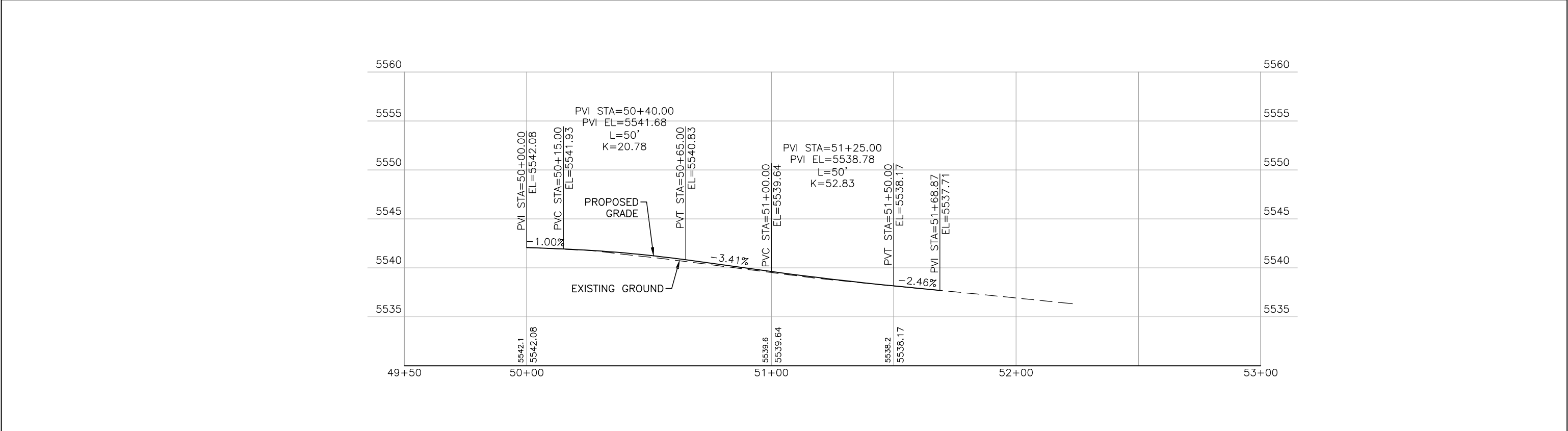
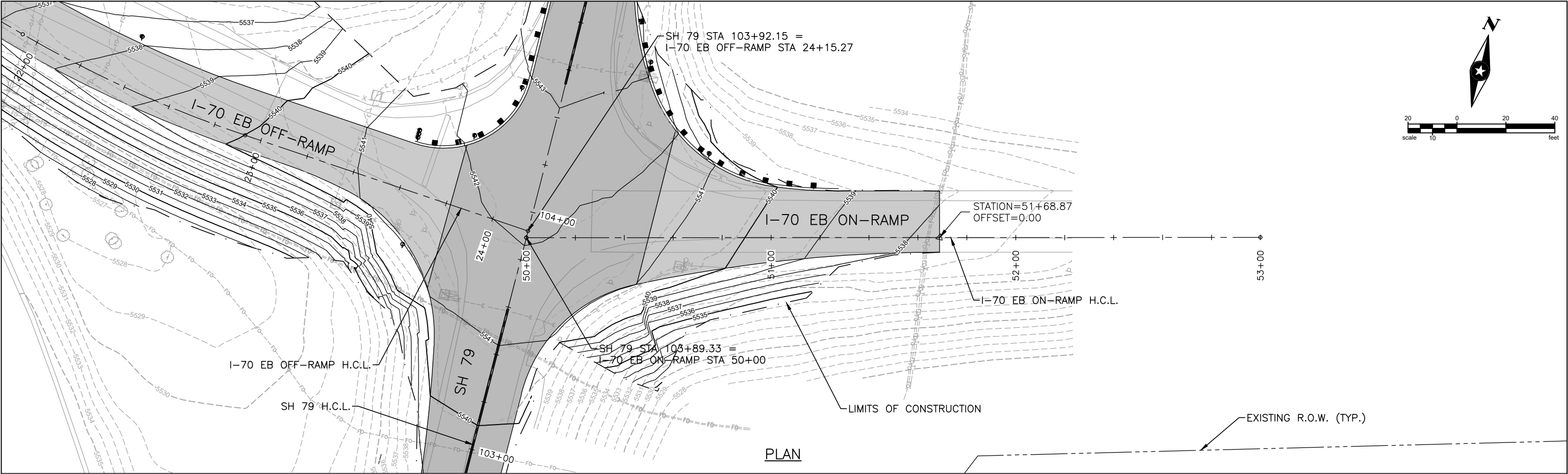


OUTSIDE EDGE OF TRAVEL PROFILE

Print Date: 3/29/22		<div><div></div><div></div><div></div><div></div><div></div></div>	Sheet Revisions			<div><div>TOWN OF BENNETT 207 MUEGGE WAY BENNETT, CO 80102 TELE. (303) 644-3249 FAX (303) 644-4125</div><div>welcome neighbors.</div></div>	As Constructed		ROADWAY PLAN AND PROFILE I-70 EB OFF-RAMP			Project No./Code	
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Horiz. Scale: 0.5:1 Vert. Scale: As Noted							Revised:		Designer: A. MARQUEZ	Structure Numbers	23180		
Unit Information Unit Leader Initials							Void:		Detailer: K. KULESZA		Sheet Number 16		
<div><div>Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 6000 2000 South Colorado Boulevard Denver, CO 80222-7900</div><div>Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801</div></div>									Sheet Subset: P&P Subset Sheets: 1 of 3				



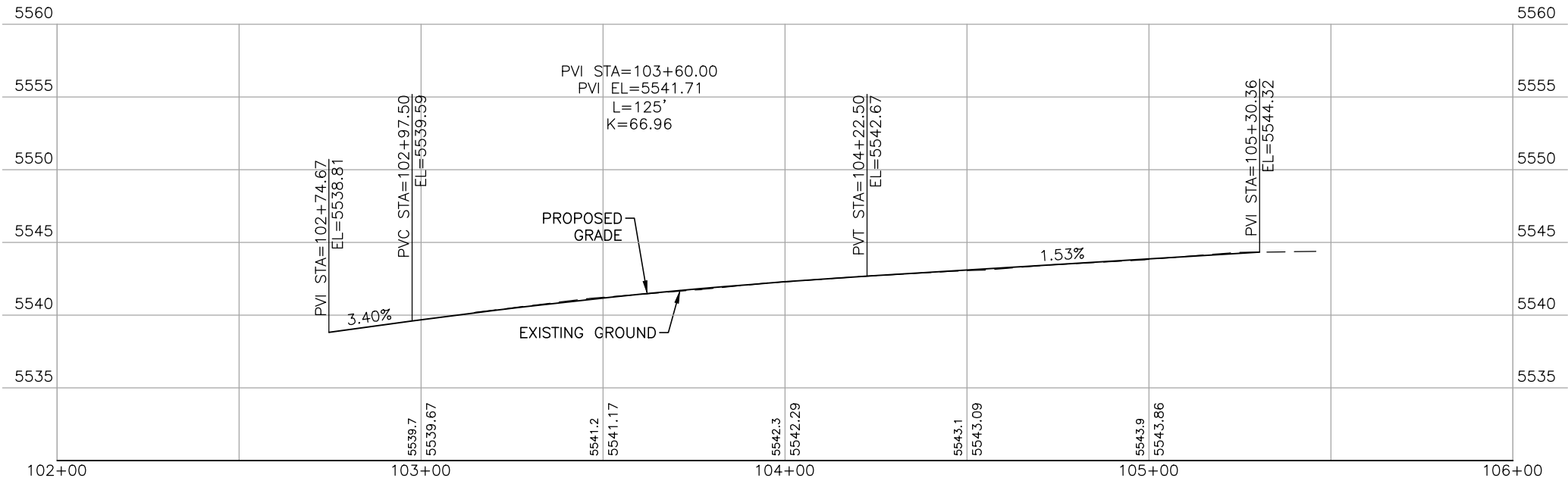
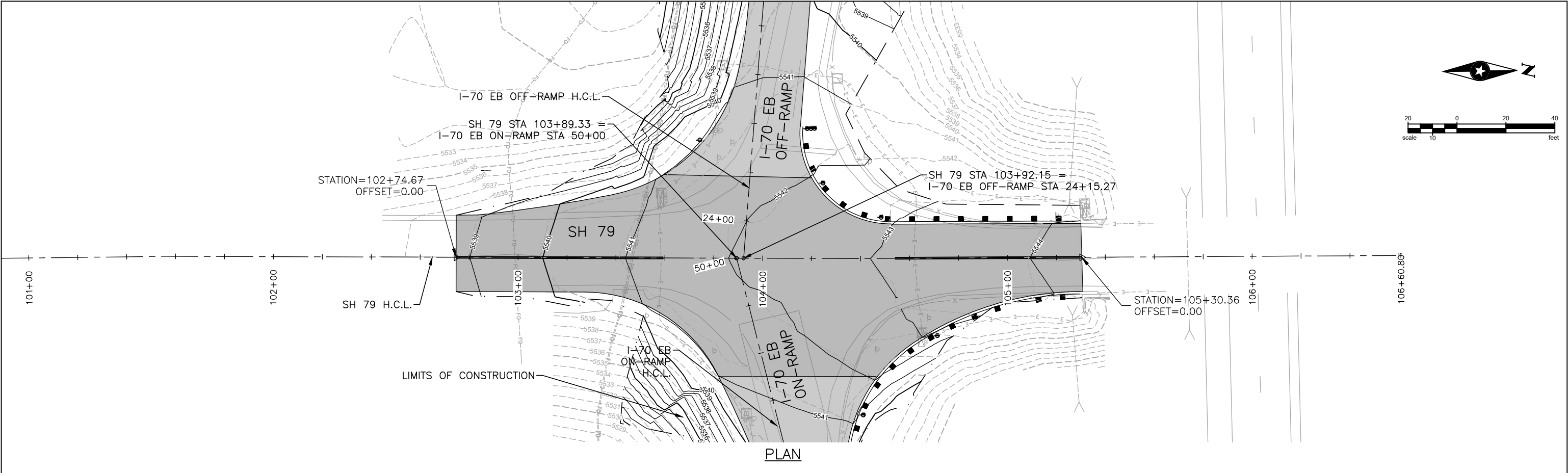
TOWN OF BENNETT
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OUTSIDE EDGE OF TRAVEL PROFILE

Print Date: 3/29/22		Sheet Revisions			As Constructed		ROADWAY PLAN AND PROFILE I-70 EB ON-RAMP			Project No./Code	
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Vert. Scale: As Noted							Revised:		23180		
							Void:		Sheet Number		
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 Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 8000 2000 South Colorado Boulevard Denver, CO 80222-7900 Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801				 TOWN OF BENNETT 207 MUEGGE WAY BENNETT, CO 80102 TELE. (303) 644-3249 FAX (303) 644-4125 welcome neighbors.				17			

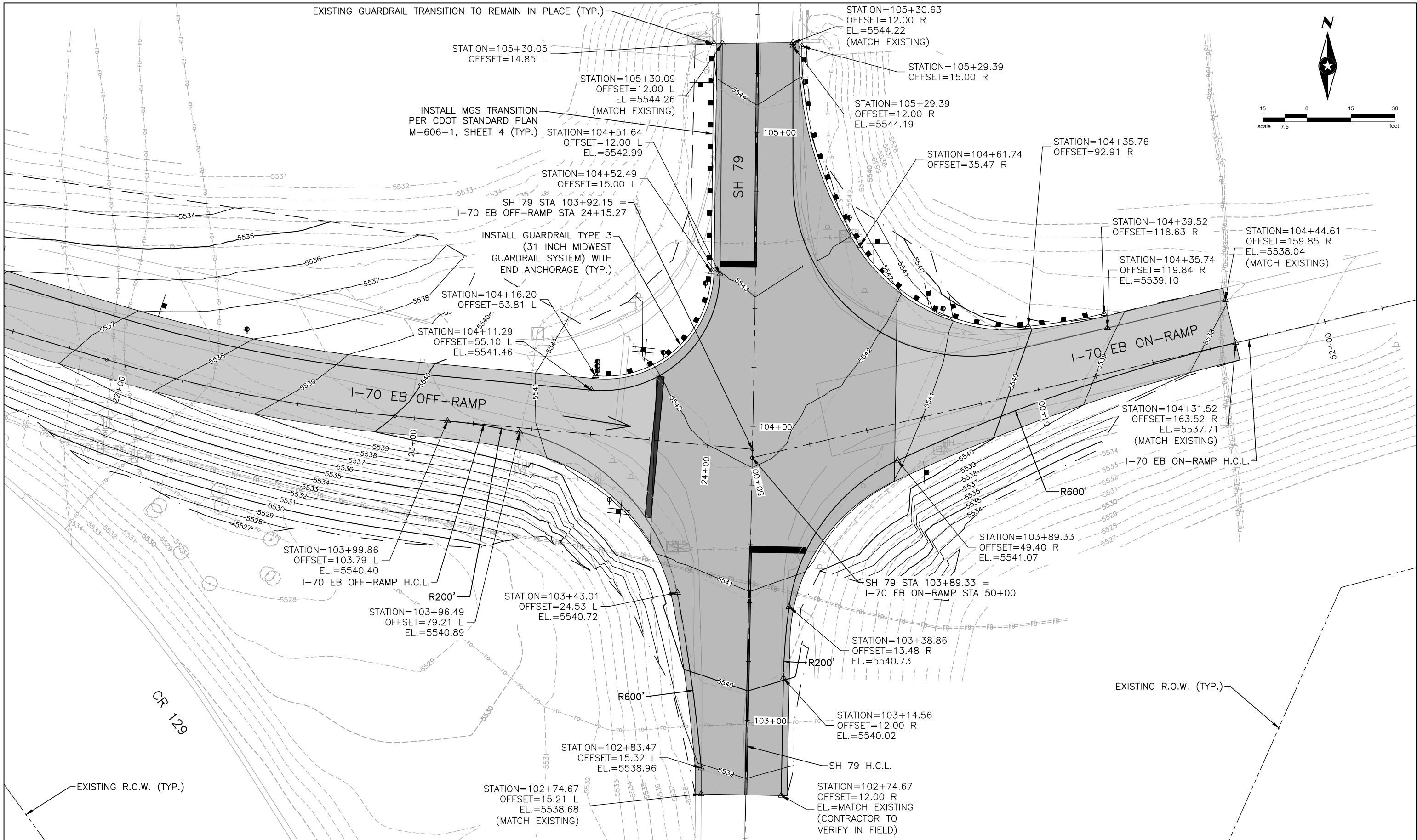
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CENTERLINE PROFILE

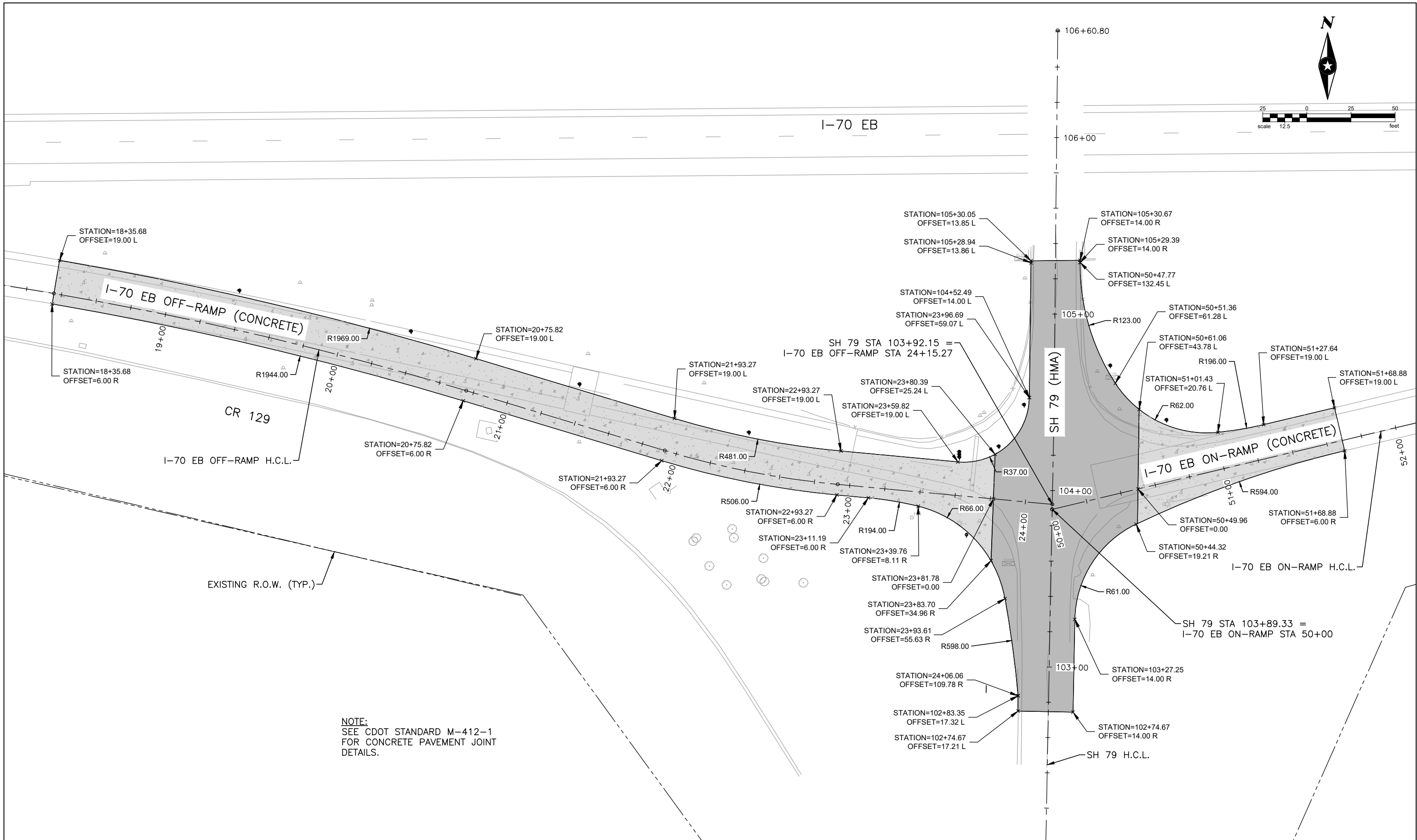
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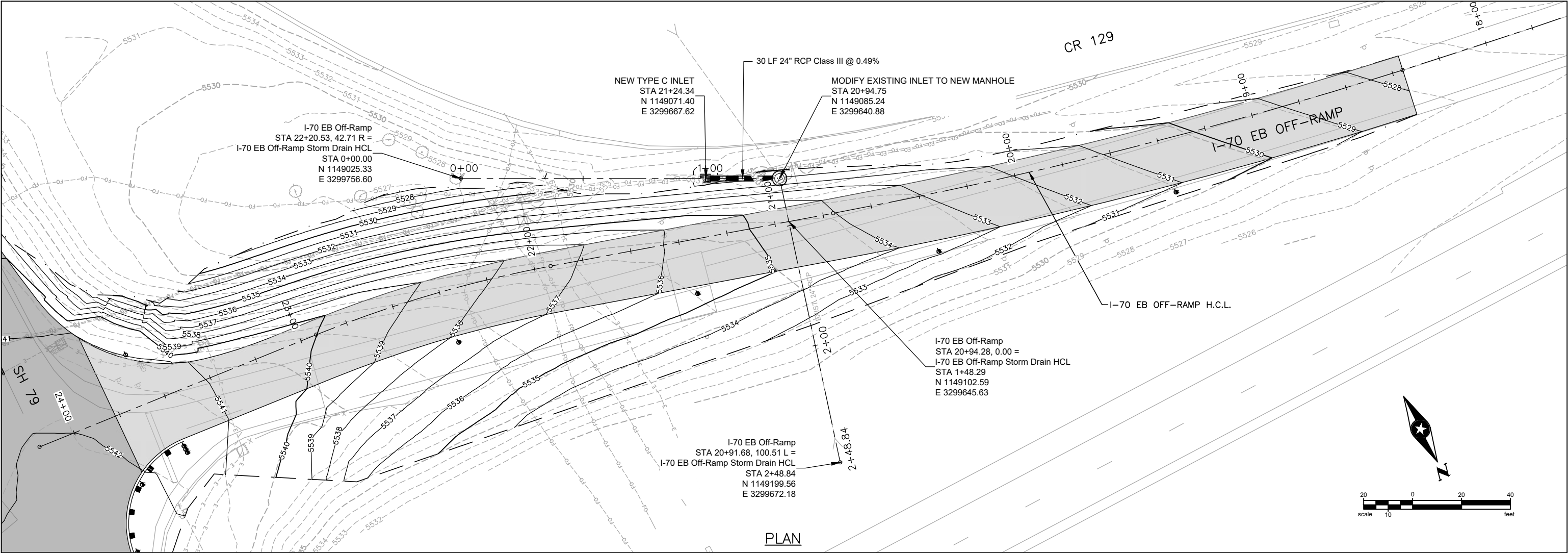
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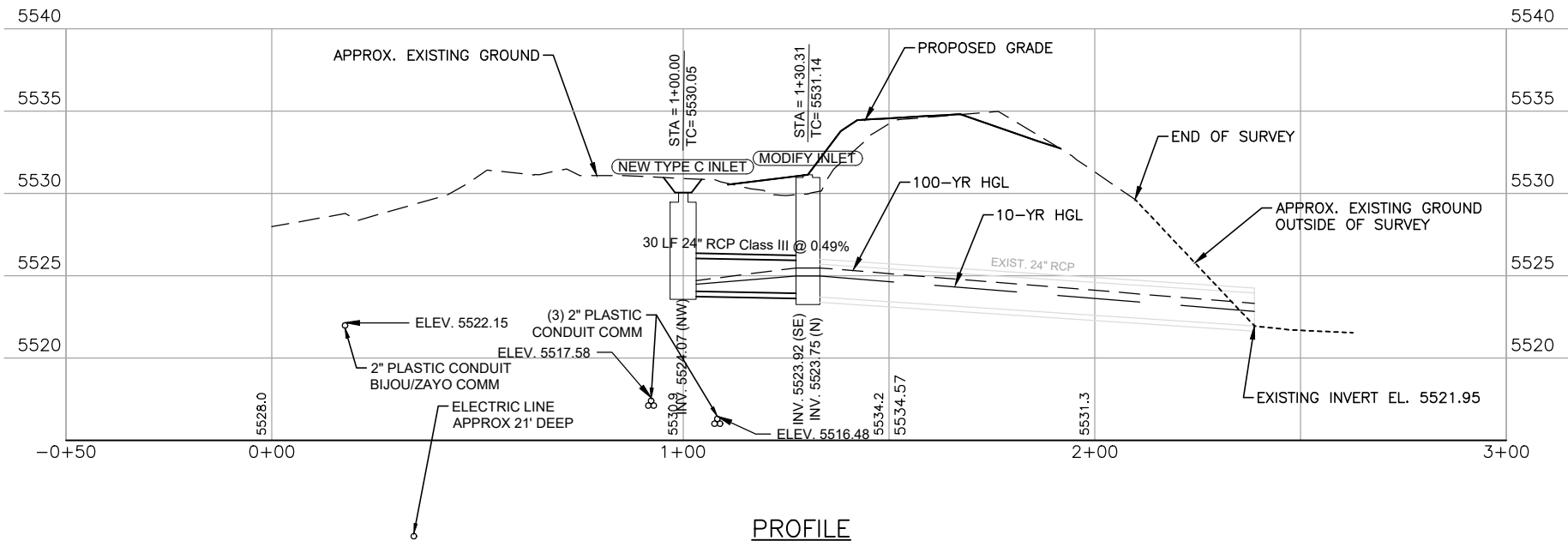
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Unit Information Unit Leader Initials		<input type="text"/>				Void:		Detailer: K. KULESZA	Numbers			
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PLAN



PROFILE

NOTE: MODIFY INLET SHALL INCLUDE ALL WORK AND MATERIALS NECESSARY TO REMOVE EXISTING INLET LID, REPLACE WITH MANHOLE RING AND COVER AND MATCH PROPOSED GRADE. THIS WORK SHALL BE APPROVED BY ENGINEER BEFORE BACKFILLING.

Print Date: 3/30/22
File Name: I70-SH79_STORM DRAIN P&P.DWG
Horiz. Scale: 1:1 Vert. Scale: As Noted
Unit Information Unit Leader Initials
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Sheet Revisions		
Date:	Comments	Init.



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STORM DRAIN PLAN AND PROFILE			
Designer:	A. MARQUEZ	Structure Numbers	
Detailer:	K. KULESZA		
Sheet Subset:	STORM	Subset Sheets:	1 of 1

Project No./Code
STU 0704-248
23180
Sheet Number 21

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TRAFFIC SIGNAL GENERAL NOTES

1. TRAFFIC SIGNAL MATERIALS AND INSTALLATION SHALL COMPLY WITH THE "STATE OF COLORADO—STANDARD PLANS, M AND S STANDARDS (LATEST EDITION), THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", THE "NATIONAL ELECTRIC CODE" (LATEST EDITION) AND ALL LOCAL ORDINANCES AND REGULATIONS THAT APPLY, EXCEPT AS NOTED ON THE PLANS OR SPECIAL PROVISIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING AERIAL AND UNDERGROUND UTILITIES AND THE PROTECTING OF THESE UTILITIES. LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND NOT ALL UTILITIES ARE NECESSARILY SHOWN. THE CONTRACTOR SHALL CONTACT ALL THE APPROPRIATE ENTITIES TO LOCATE UNDERGROUND FACILITIES AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE EXACT LOCATION OF EACH UTILITY SHALL BE FIELD VERIFIED BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR AS A RESULT OF THE CONTRACTOR'S FAILURE TO LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. LOCATIONS OF THE TRAFFIC SIGNAL LIGHT POLES AND PEDESTAL POLE FOUNDATIONS SHALL BE ADJUSTED BY THE ENGINEER IF NECESSARY.
3. THE PHYSICAL FEATURES WITHIN THE LIMITS OF THE PROJECT HAVE BEEN SHOWN BASED ON THE BEST AVAILABLE INFORMATION AT THE TIME OF DESIGN. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE FEATURES SHOWN. THE CONTRACTOR SHALL REVIEW AND VERIFY EXISTING PHYSICAL FEATURES AND INFORM HIMSELF OF THE CONDITIONS TO BE ENCOUNTERED DURING CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS/INSPECTIONS REQUIRED TO COMPLETE THE SCOPE OF WORK PRESENTED HEREIN.
5. ALL ITEMS NOT SHOWN IN THE SUMMARY OF APPROXIMATE QUANTITIES SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE TRAFFIC SIGNAL AND WILL NOT BE MEASURED AND PAID FOR SEPARATELY. ALL QUANTITIES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK NECESSARY TO COMPLETE THE CONSTRUCTION SHOWN ON THESE PLANS. MEASUREMENT AND PAYMENT OF TRAFFIC SIGNALS CONSTRUCTION ITEMS SHALL CONFORM TO THE PROJECT SPECIFICATIONS.
6. PULL BOX LOCATIONS ARE APPROXIMATE. ACTUAL LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE ENGINEER. ALL PULL BOXES SHALL BE FLUSH WITH FINISHED GROUND SURFACE.
7. ALL PULL BOXES, INCLUDING THOSE FOR WHICH COST IS INCLUDED IN THE COST OF CONDUIT ITEMS, SHALL BE FABRICATED PER PROJECT SPECIAL PROVISION 613 PULL BOX.
8. THE SIGNAL SHALL NOT BE PUT IN FLASH MODE OR MADE FULLY OPERATIONAL UNTIL CDOT HAS INSPECTED AND APPROVED THE INSTALLATION AND ALL REGULATORY SIGNING AND PAVEMENT MARKINGS ARE IN PLACE. INCH PREFORMED JOINT MATERIAL SHALL BE APPLIED AROUND THE 6 INCHES OF LEVELING CONCRETE BENEATH SIGNAL POLES WHEN THE SIGNAL POLE IS INSTALLED IN EXISTING CONCRETE AND CONSIDERED INCIDENTAL TO THE WORK AND SHALL NOT BE PAID FOR SEPARATELY.
9. ANY DAMAGES INCURRED DURING CONSTRUCTION ACTIVITIES INCLUDING BUT NOT LIMITED TO LANDSCAPING, SIDEWALKS, CURB AND GUTTER, CONCRETE RAMPS AND SIGNS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT HIS EXPENSE.
10. WASTE MATERIALS GENERATED BY THE CONTRACTOR SHALL BE DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A LEGAL DISPOSAL SITE FOR ALL UNUSABLE MATERIALS.
11. CONTRACTOR'S SIGNAL ELECTRICIAN IS REQUIRED TO BE ON SITE, AT A MINIMUM, DURING AM & PM PEAK HOURS FOLLOWING THE NEXT DAY A SIGNAL IS TURNED ON TO OBSERVE OPERATION AND MAKE ADJUSTMENTS AS NEEDED. THE ENGINEER MAY REQUIRE THE SIGNAL ELECTRICIAN TO BE ONSITE FOR ADDITIONAL HOURS AS DIRECTED. THIS APPLIES TO BOTH PERMANENT AND TEMPORARY INSTALLATIONS.
12. SHOULD CONTRACTOR ENCOUNTER WATER IN CAISSON, ANY DE-WATERING METHODS & NECESSARY PERMITS SHALL BE INCLUDED IN THE COST OF CAISSON.
13. A JOURNEYMAN ELECTRICIAN SHALL BE ON SITE AT ALL TIMES DURING ELECTRICAL TRAFFIC SIGNAL WORK INCLUDING INSTALLATION OF CONDUITS. THE CONTRACTOR SHALL ADHERE TO THE FOLLOWING REQUIREMENTS REGARDING TRAFFIC SIGNAL CONSTRUCTION AND MAINTENANCE PERSONNEL. CURRENT CERTIFICATES SHOWING QUALIFICATIONS SHALL BE SUBMITTED AT THE PRE-CONSTRUCTION MEETING.

(1) FOR ANY WORK INSIDE THE TRAFFIC SIGNAL CABINET, SIGNAL AND SIGNAL BENCH TECHNICIANS SHALL BE MINIMUM IMSA LEVEL II CERTIFIED. THIS INCLUDES THE COMPLETION OF TRAINING IN CONSTRUCTION, CORRECTIVE MAINTENANCE, AND SIGNAL TURN-ON.

(2) FIELD TECHNICIAN/ELECTRICIAN – OR TRAFFIC SIGNAL BENCH TECHNICIAN/SIGNAL TECHNICIAN – IS REQUIRED. AN IMSA LEVEL II TRAFFIC SIGNAL ELECTRICIAN – SHALL BE ON THE JOB SITE AT ALL TIMES THAT SIGNALIZATION WORK IS TAKING PLACE TO ENSURE PROPER CONSTRUCTION.

A MAXIMUM RATIO OF FOUR IMSA LEVEL I TO ONE IMSA LEVEL II WILL BE ALLOWED FOR WORK EXTERNAL TO THE SIGNAL CABINET.THE UNITED STATES DEPARTMENT OF LABOR BUREAU OF APPRENTICESHIP AND TRAINING MAY BE SUBSTITUTED FOR THE IMSA LEVEL I TRAFFIC SIGNAL ELECTRICIAN REQUIREMENT.
14. ITEM 613-10000, WIRING (1 LUMP SUM), SHALL INCLUDE ALL NECESSARY WIRING WORK, NOT OTHERWISE INCLUDED IN AN INDIVIDUAL PAY ITEM, REQUIRED TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL TRAFFIC SIGNAL SYSTEM.
15. THE LOCATION OF TRAFFIC SIGNAL EQUIPMENT INCLUDING CONTROLLER CABINETS, POLES, AND PULL BOXES WITHIN CDOT ROW SHALL BE FIELD VERIFIED WITH TONY REED, CDOT REGION 1 TRAFFIC SIGNALS/RAMP METERING, AT 720-737-6807 AND TONY.REED@STATE.CO.US PRIOR TO CONSTRUCTION. SIGNAL DETECTION SHALL BE FIELD VERIFIED WITH THE VENDOR AND TONY REED PRIOR TO CONSTRUCTION.

TRAFFIC SIGNAL GENERAL NOTES (CONT.)

16. OPEN EXCAVATIONS SHALL NOT BE ALLOWED UNPROTECTED WHEN CONSTRUCTION WORK IS NOT IN PROGRESS (INCLUDING OVERNIGHT, WEEKENDS AND HOLIDAYS). METHOD(S) OF PROTECTING EXCAVATIONS (IE METAL PLATES OR CONCRETE BARRIER) FROM VEHICLES AND PEDESTRIANS SHALL BE APPROVED BY THE ENGINEER. THE COST OF PROTECTING EXCAVATIONS WILL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
17. TWO OR MORE WEEKS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TEMPORARY PHASING AND TIMING SIGNAL PLANS TO THE ENGINEER FOR APPROVAL.
18. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL SUPPLY 2 SETS OF RECORD DRAWINGS, CORRECTED PLANS AND ANY OTHER ADDITIONAL DATA REQUIRED BY THE ENGINEER TO THE ENGINEER.
19. THE CONTRACTOR SHALL PROVIDE CDOT WITH AT LEAST FOUR (4) SETS OF EQUIPMENT SPECIFICATIONS/DESCRIPTIONS AND OBTAIN APPROVALS PRIOR TO ORDERING THE EQUIPMENT.
20. ALL MANUALS, INSTALLATION GUIDES AND ASSOCIATED EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER AT TIME OF INSPECTION.
21. CONTROLLER CABINET SHALL BE AS SHOWN ON THE PLANS AND SHALL BE INCLUDED IN THE COST OF THE CONTROLLER. THE CONTROLLER CABINET SHALL BE MOUNTED ON A PREFORMED CONCRETE BASE. LOAD SWITCHES SHALL INDICATE INPUT AND OUTPUT THE UNINTERRUPTIBLE POWER SUPPLY (UPS) SHALL BE PROVIDED TO RUN SIGNAL FOR 2 HOUR IN ALL PHASES, AND FLASH UP TO FOUR ADDITIONAL HOURS.
22. CAISSON LOCATIONS SHALL BE MARKED, POTHOLED IF NECESSARY FOR CONFLICTING UTILITIES, AND FIELD VERIFIED BY THE PROJECT ENGINEER PRIOR TO ORDERING MAST ARMS. 20 HOURS OF POTHOLING IS ESTIMATED FOR THIS PROJECT.
23. THE CONTRACTOR SHALL OBTAIN AN ELECTRICAL PERMIT FROM THE COLORADO STATE ELECTRICAL BOARD (DORA) FOR ALL ELECTRICAL AND TRAFFIC SIGNAL WORK.
24. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE TRAFFIC CONTROL THROUGHOUT THE PROJECT, INCLUDING PROPER TRAFFIC CONTROL DEVICES AND PERSONNEL. TRAFFIC CONTROL IS TO BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
25. ALL SIGNAL DETECTION SHOWN ON PLANS IS FOR ILLUSTRATIVE PURPOSES ONLY. ONE STOP BAR DETECTION UNIT AND THREE ADVANCE DETECTION UNITS ARE ESTIMATED.
26. TRAFFIC SIGNAL POLES SHALL BE A MINIMUM OF 40' IN HEIGHT FROM THE FINISHED GRADE. TRAFFIC SIGNAL POLES SHALL BE HOT DIP GALVANIZED STEEL.
27. FIRE PREEMPTION UNITS SHALL BE FURNISHED, TESTED, AND APPROVED BY THE LOCAL FIRE AUTHORITY.

Print Date: 3/29/22		<div><div></div><div></div><div></div><div></div><div></div></div>	Sheet Revisions			<div><div></div><div>TOWN OF BENNETT 207 MUEGGE WAY BENNETT, CO 80102 TELE. (303) 644-3249 FAX (303) 644-4125</div><div>welcome neighbors.</div></div>	As Constructed		TRAFFIC SIGNAL NOTES			Project No./Code	
File Name: 170-SH79_SIGNAL PLAN.DWG			Date:	Comments	Init.		No Revisions:					STU 0704-248	
Horiz. Scale: 0.5:1 Vert. Scale: As Noted			<div></div>				Revised:		Designer: A. MARQUEZ	Structure Numbers	23180		
Unit Information Unit Leader Initials			<div></div>				Void:		Detailer: M. WAGNER				
<div><div></div><div>Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 6000 2000 South Colorado Boulevard Denver, CO 80222-7900</div><div>Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801</div></div>			<div></div>						Sheet Subset: SIGNAL		Subset Sheets: 1 of 6		Sheet Number 22

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TABULATION OF TRAFFIC SIGNAL ITEMS						
CONTRACT ITEM NO.	CONTRACT ITEM DESCRIPTION	UNIT	I-70 EB RAMPS & SH 79			TOTAL QUANTITY
			NE	SE	SW	
			QTY	QTY	QTY	
503-00036	Drilled Shaft (36 Inch)	LF	19	19	19	57
613-00206	2 Inch Electrical Conduit (Bored)	LF		90	95	185
613-00306	3 Inch Electrical Conduit (Bored)	LF		180	190	370
613-01200	2 Inch Electrical Conduit (Plastic)	LF	10	10	25	45
613-01300	3 Inch Electrical Conduit (Plastic)	LF	20	20	30	70
613-07004	Type Four Pull Box	EACH	1	1	1	3
613-10000	Wiring	L S				1
613-13000	Luminaire (LED) (Special)	EACH	1	1	1	3
613-80130	Service Meter Cabinet	EACH			1	1
614-00011	Sign Panel (Class I)	SF	9		9	18
614-00029	Sign Panel (Class II) (Install Only)	EACH		1		1
614-70336	Traffic Signal Face (12-12-12)	EACH	4	4	3	11
614-72855	Traffic Signal Controller Cabinet	EACH			1	1
614-72866	Fire Preemption Unit and Timer	EACH	2	1		3
614-72887	Microwave Vehicle Radar Detector (Stop Bar Detection)	EACH	1	1	1	5
	Microwave Vehicle Radar Detector (Advanced Detection)	EACH	1		1	
614-81145	Traffic Signal-Light Pole Steel (1-45 Foot Mast Arm)	EACH	1	1	1	3
614-86248	Traffic Signal Controller (Type 2070LC)	EACH			1	1
614-86800	Uninterrupted Power Supply	EACH			1	1
614-87320	Closed Circuit Television	EACH		1		1

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Unit Information Unit Leader Initials							Void:		Detailer: M. WAGNER	Numbers	Sheet Number		
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POLE ID	①	②	③
LOCATION	NE	SE	SW
NORTHING	1149103.66	1149018.48	1149014.91
EASTING	3300008.79	3300005.51	3299910.47
MAST ARM LENGTH	45 FT	45 FT	45 FT
CAISSON DIAMETER	36 IN	36 IN	36 IN
CAISSON PAY LENGTH	19 FT	19 FT	19 FT
STD. PLAN NO.	S-614-40A	S-614-40A	S-614-40A

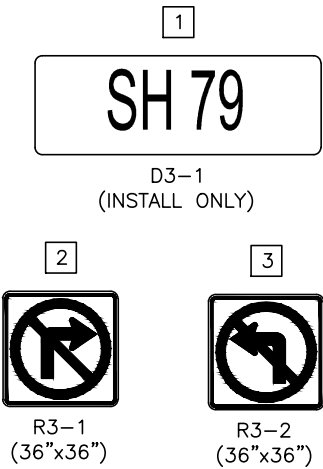
LEGEND

- TRAFFIC SIGNAL CONTROLLER & CABINET
- PULL BOX (TYPE 4 UNLESS NOTED)
- EMERGENCY VEHICLE PREEMPTION (EVP)
- UNDERGROUND CONDUIT
- LUMINAIRE
- MAST ARM (LENGTH AS SPECIFIED)
- CLOSED CIRCUIT TELEVISION
- SIGNAL HEAD WITH BACKPLATE
- SIGNAL HEAD
- MAST ARM MOUNTED SIGN
- ELECTRIC SERVICE METER CABINET
- MICROWAVE VEHICLE RADAR DETECTOR

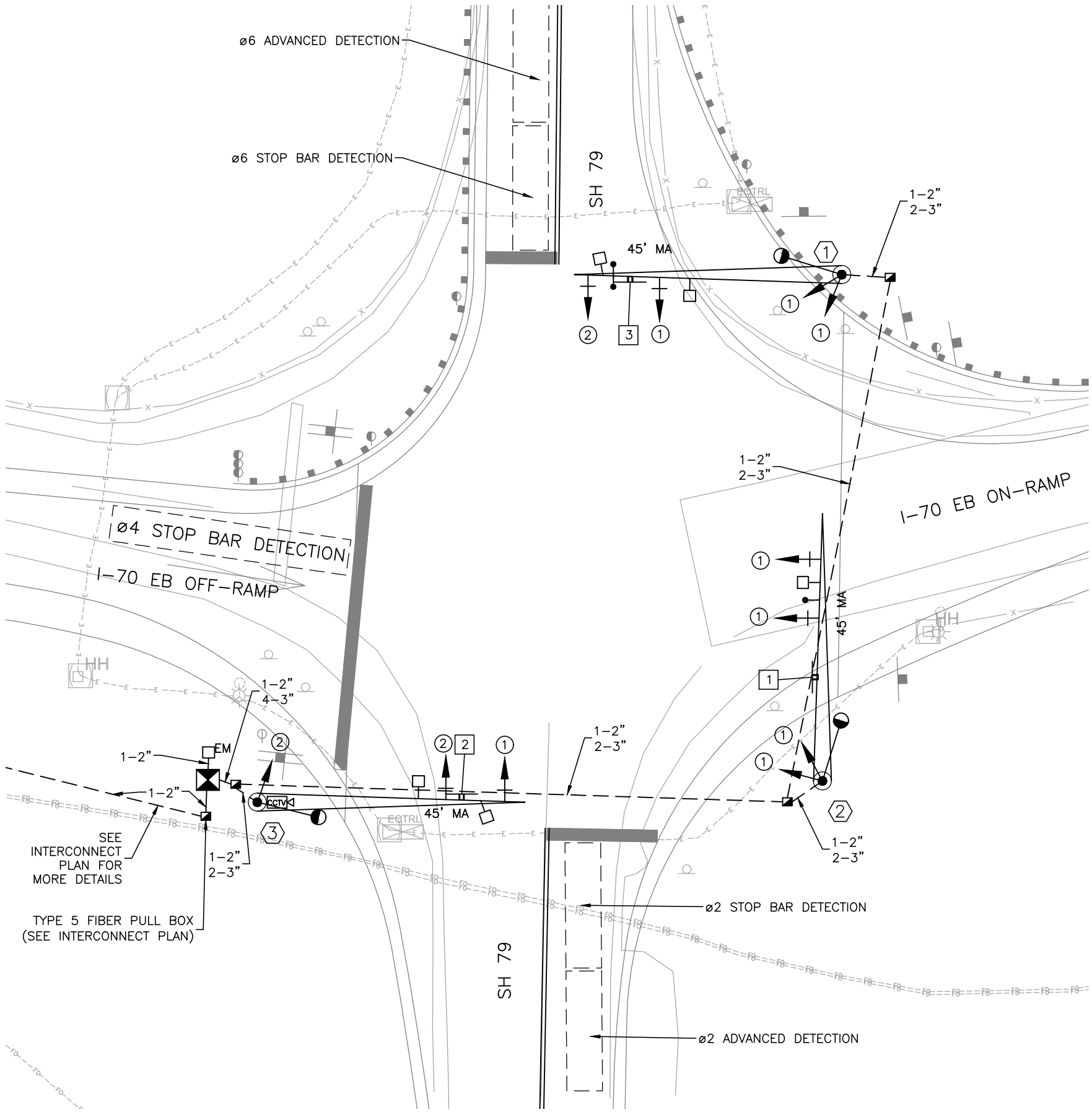
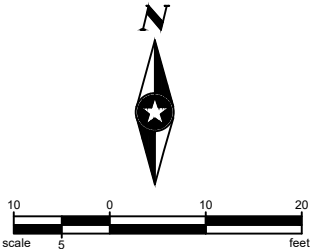
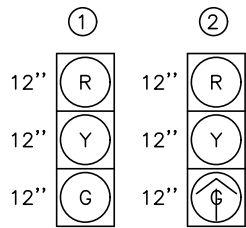
PHASE DIAGRAM

N/A	↑	N/A	→
ø1	ø2	ø3	ø4
N/A	↓	N/A	N/A
ø5	ø6	ø7	ø8

SIGN DETAILS



SIGNAL HEAD DETAIL



Print Date: 3/29/22
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Horiz. Scale: 0.5:1 Vert. Scale: As Noted
Unit Information Unit Leader Initials
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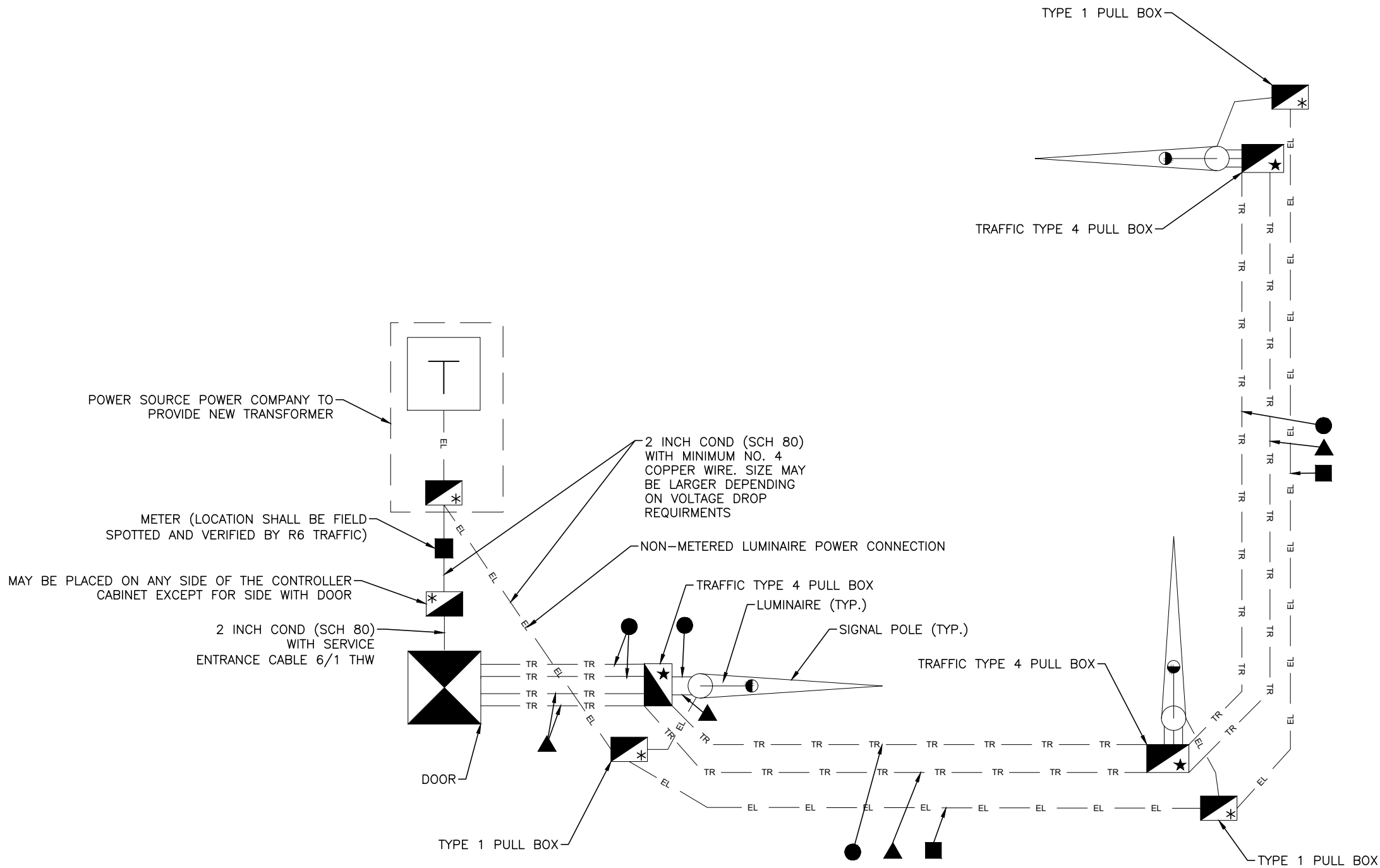
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Date:	Comments	Init.



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As Constructed		TRAFFIC SIGNAL PLAN		Project No./Code
No Revisions:		STU 0704-248		
Revised:		Designer: A. MARQUEZ	Structure Numbers	23180
Void:		Detailer: M. WAGNER		
		Sheet Subset: SIGNAL	Subset Sheets: 3 of 6	Sheet Number 24

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NOTES

1. See Standards M-613-1, S-614-40 AND S-614-43 for Meter, Luminaire, Pull box and Traffic Signal details.
2. Payment of luminaires shall be as shown on the plans.
3. FOR STREET LIGHT LUMINAIRES ON SPAN WIRE INSTALLATIONS-
Two (2) number 12 AGW copper TW insulated building wires shall be installed by the contractor from the end of the luminaire arm, through the pole, along the span wire cable to the signal pole nearest the controller cabinet, through the pole, then to the power source.
4. FOR STREET LIGHT LUMINAIRES ON MAST ARM INSTALLATIONS
Two (2) number 12 AGW copper TW insulated building wires shall be installed by the contractor from the end of the luminaire arm, through the pole to the pull box at the base of the signal pole. The contractor shall also install the same size wiring from the pull box at the base of the signal pole, through the conduit network, to the power source.
5. All wiring for luminaires shall be included in the work and not paid for separately.
6. All splices at the power source shall be done by the Power Company
7. Wiring for street light luminaires shall be tagged per project special provision, Revision of Section 613 - Electrical Conductor Identification
8. 10 feet of extra wire shall be coiled at the base of the power source.

LEGEND

- 3 Inch Electrical Conduit (SCH 80) for loop detector wire, pedestrian push button wire and communication lines.
- ▲ 3 Inch Electrical Conduit (SCH 80) for traffic signal field electrical wire communication lines.
- 2 Inch Electrical Conduit (SCH 80) for luminaire wiring
- ★ Shall have the word "TRAFFIC" engraved into lid
- * Shall have the word "ELECTRIC" engraved into lid. These Pull Boxes shall not be paid for separately but shall be paid for under Specification 613.12 of the Colorado Department of Transportation "Standard Specification for Road and Bridge Construction"

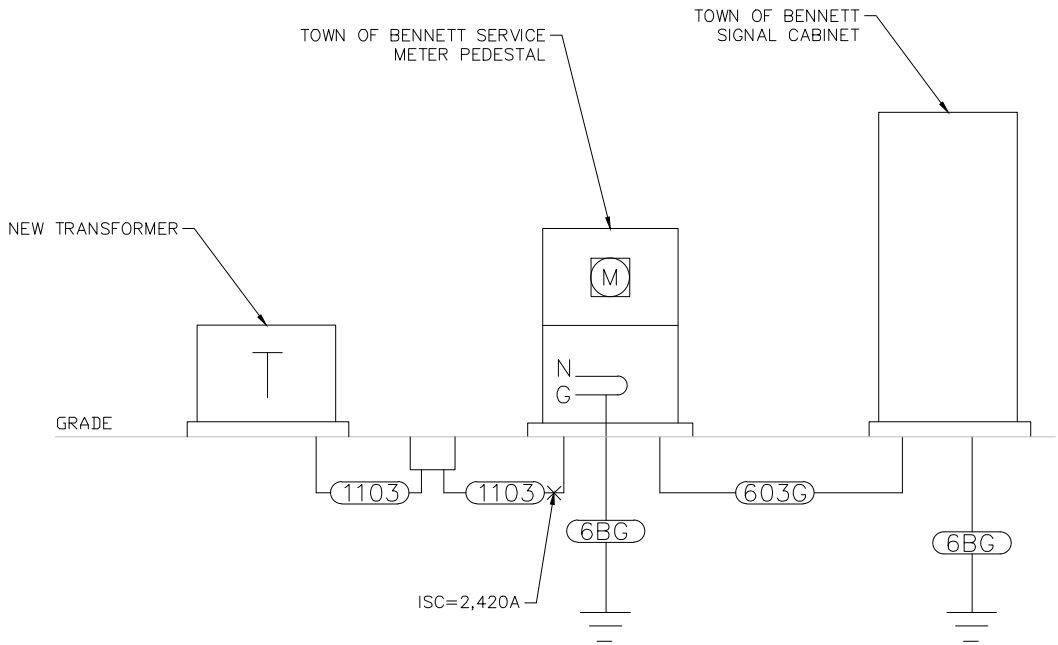
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Horiz. Scale: 1:1 Vert. Scale: As Noted				
Unit Information Unit Leader Initials				
<div><div><div>Short Elliott Hendrickson Inc.</div><div>Colorado Center Tower One</div><div>Suite 6000</div><div>2000 South Colorado Boulevard</div><div>Denver, CO 80222-7900</div></div><div><div>Tele. (720) 540-6800</div><div>(800) 490-4966</div><div>Fax (720) 540-6801</div></div></div>				



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No Revisions:				STU 0704-248
Revised:		Designer: A. MARQUEZ	Structure Numbers	23180
Void:		Detailer: M. WAGNER		
		Sheet Subset: SIGNAL	Subset Sheets: 4 of 6	Sheet Number 25

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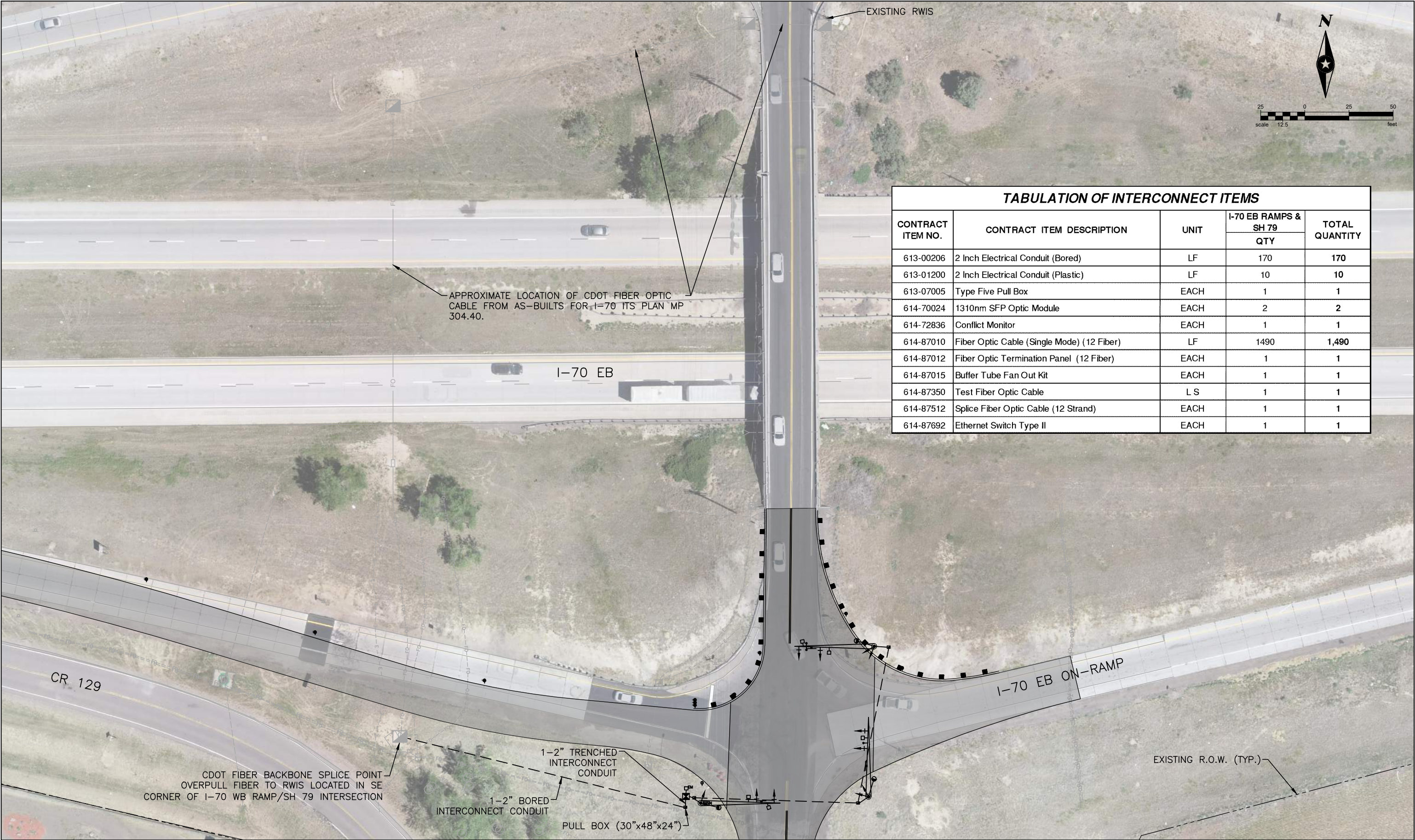


ELECTRICAL ONE-LINE DIAGRAM


SH 79 & I-70 EB RAMPS NO SCALE

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File Name: I70-SH79_SIGNAL PLAN.DWG			Date:	Comments	Init.		No Revisions:					STU 0704-248	
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TABULATION OF INTERCONNECT ITEMS				
CONTRACT ITEM NO.	CONTRACT ITEM DESCRIPTION	UNIT	I-70 EB RAMPS & SH 79	TOTAL QUANTITY
			QTY	
613-00206	2 Inch Electrical Conduit (Bored)	LF	170	170
613-01200	2 Inch Electrical Conduit (Plastic)	LF	10	10
613-07005	Type Five Pull Box	EACH	1	1
614-70024	1310nm SFP Optic Module	EACH	2	2
614-72836	Conflict Monitor	EACH	1	1
614-87010	Fiber Optic Cable (Single Mode) (12 Fiber)	LF	1490	1,490
614-87012	Fiber Optic Termination Panel (12 Fiber)	EACH	1	1
614-87015	Buffer Tube Fan Out Kit	EACH	1	1
614-87350	Test Fiber Optic Cable	L S	1	1
614-87512	Splice Fiber Optic Cable (12 Strand)	EACH	1	1
614-87692	Ethernet Switch Type II	EACH	1	1

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Unit Information	Unit Leader Initials
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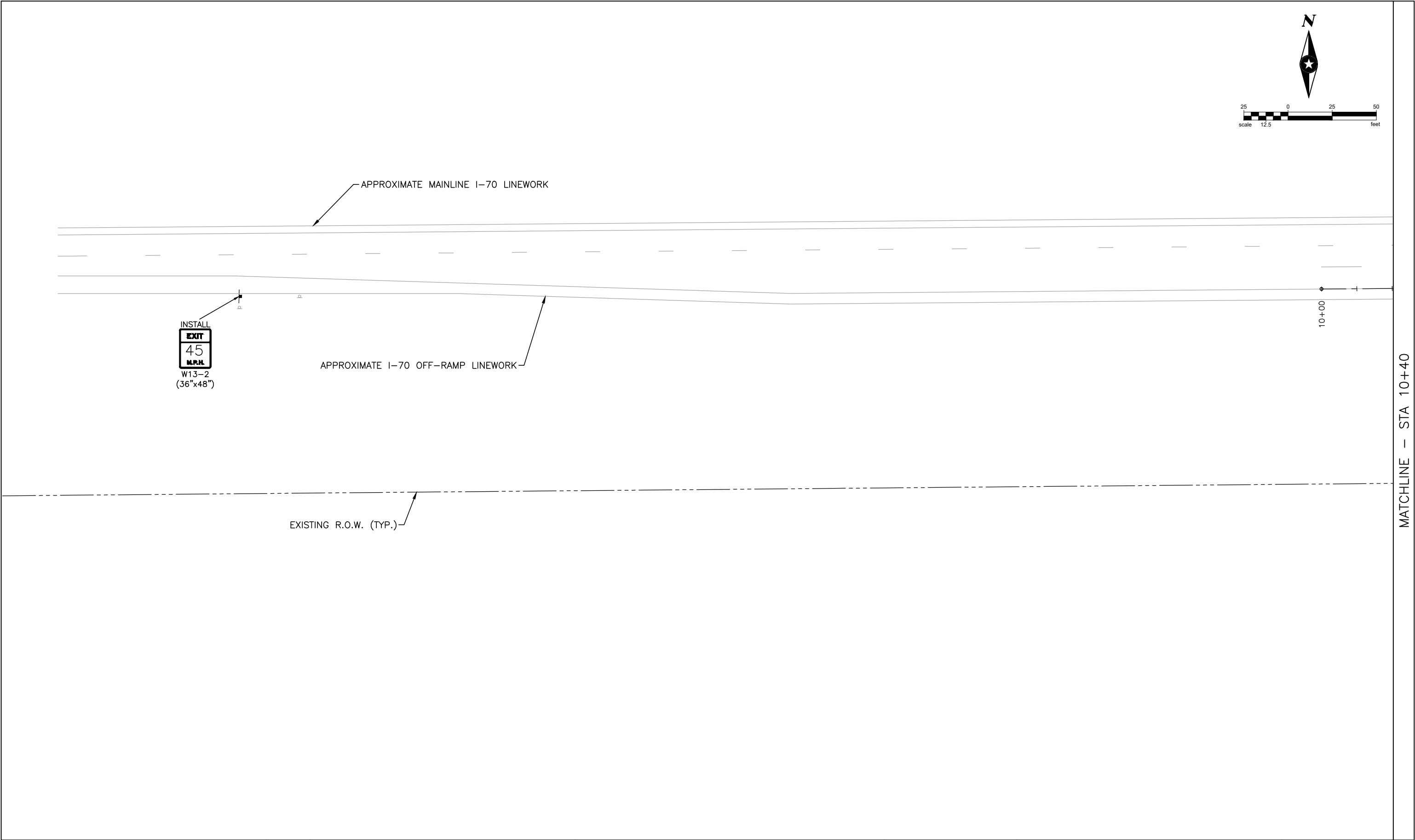


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No Revisions:				STU 0704–248
Revised:	Designer: A. MARQUEZ	Structure		23180
	Detailer: K. KULESZA	Numbers		
Void:	Sheet Subset: SIGNAL	Subset Sheets: 6 of 6		Sheet Number 27

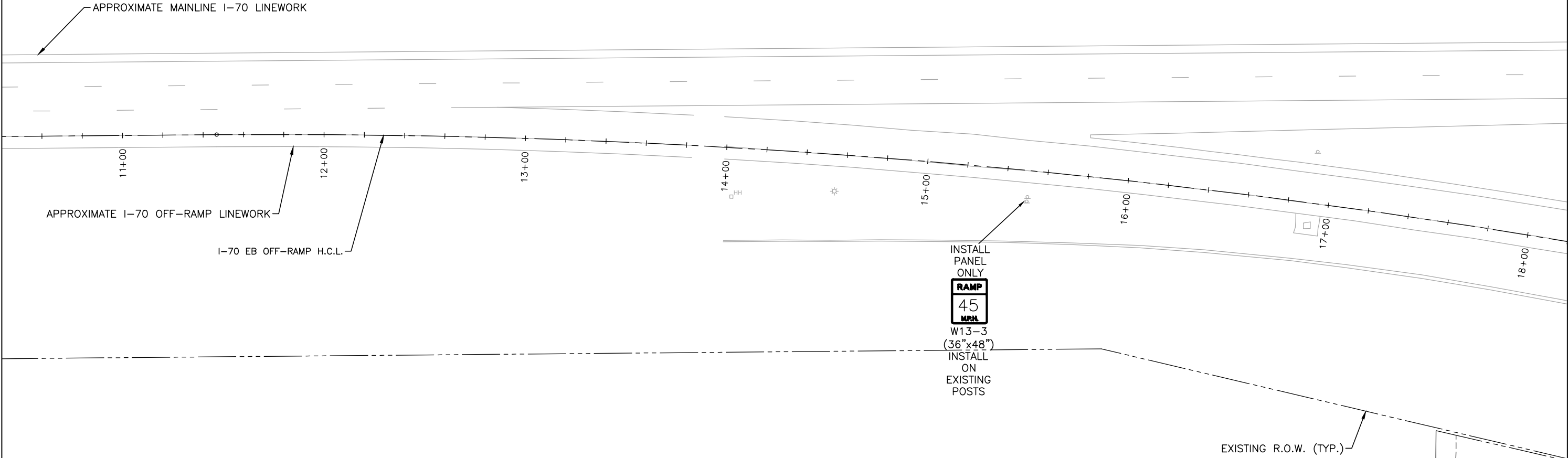
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<div><div><div></div><div></div></div><div>Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 6000 2000 South Colorado Boulevard Denver, CO 80222-7900</div><div>Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801</div></div>			<div></div>					Void:	Sheet Subset: S&S PLAN		Subset Sheets: 1 of 3		28

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MATCHLINE — STA 10+40



MATCHLINE — STA 18+20

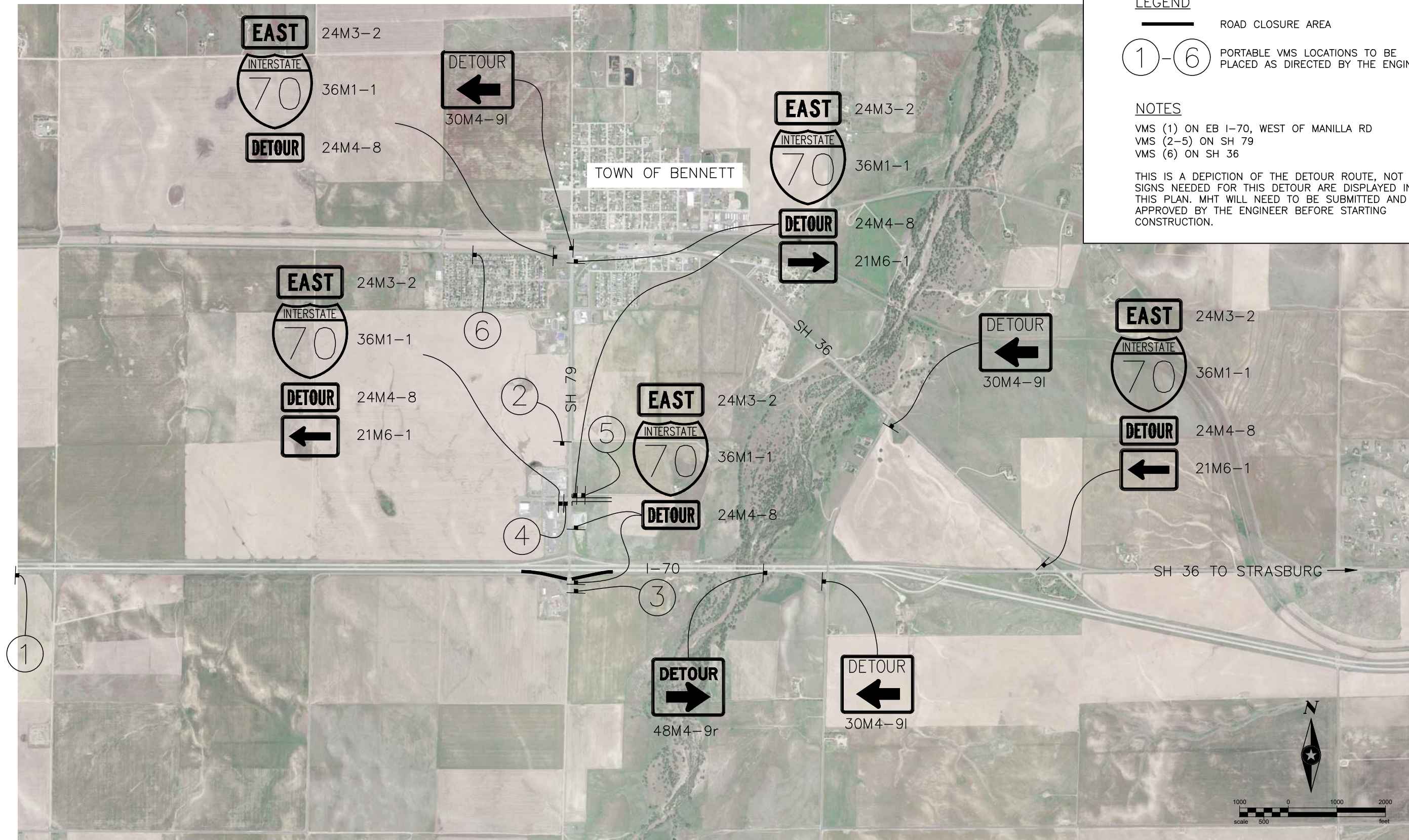
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Unit Information	Unit Leader Initials
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Sheet Revisions		
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No Revisions:	Revised:			STU 0704-248	
Void:		Designer: A. MARQUEZ	Structure Numbers	23180	
		Detailer: K. KULESZA		Sheet Number 29	
		Sheet Subset: S&S PLAN	Subset Sheets: 2 of 3		



LEGEND

- ROAD CLOSURE AREA
- 1-6 PORTABLE VMS LOCATIONS TO BE PLACED AS DIRECTED BY THE ENGINEER

NOTES

VMS (1) ON EB I-70, WEST OF MANILLA RD
VMS (2-5) ON SH 79
VMS (6) ON SH 36

THIS IS A DEPICTION OF THE DETOUR ROUTE, NOT ALL SIGNS NEEDED FOR THIS DETOUR ARE DISPLAYED IN THIS PLAN. MHT WILL NEED TO BE SUBMITTED AND APPROVED BY THE ENGINEER BEFORE STARTING CONSTRUCTION.

Print Date: 3/29/22		Sheet Revisions			As Constructed		BENNETT I-70 EB RAMP CLOSURE DETOUR			Project No./Code	
File Name: I70-SH79_DETOUR PLAN.DWG										STU 0704-248	
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<div><div> Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 6000 2000 South Colorado Boulevard Denver, CO 80222-7900</div><div>Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801</div></div>						Void:				Subset Sheets: 1 of 1	



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welcome neighbors.

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1. SITE DESCRIPTION

1. PROJECT SITE LOCATION: Location or address of construction office: I-70 Eastbound Ramps and SH 79 in Bennett, CO.

B. PROJECT SITE DESCRIPTION:

C. PROPOSED SEQUENCING FOR MAJOR CONSTRUCTION ACTIVITIES: clearing and grubbing, grading, drainage, and excavation.

D. ACRES OF DISTURBANCE:

- E. EXISTING SOIL DATA Weld-Deertail complex, 0 to 3 percent slopes (4.5%), Weld-Deertail silt loams, 0 to 3 percent slopes (95.5%)

F. EXISTING VEGETATION, INCLUDING PERCENT OF VEGETATIVE COVER: During design, the SWMP Administrator for Design in consultation with the Engineer will determine if the SWMP Administrator for Design or the SWMP Administrator for Construction will conduct the Vegetation Transects. If the site is disturbed, an Adequate Reference Site(s) may be utilized, refer to the permit.

Pre-Construction Date of survey: _____ Percent Existing Vegetative Cover: _____

Description of existing vegetation:

Method for determining percent vegetative cover:

Include a map or table showing transect locations, photos documenting pre-Construction vegetative cover, and methodology used to determine existing vegetative cover to SWMP tab 17:

Post-Construction Date of survey: _____ Percent Vegetative Cover: _____

Description of vegetation:

The method used to determine pre-construction percent cover shall be used to determine post construction percent cover.

Include map or table showing transect locations, photos documenting post-Construction vegetative cover, and methodology used to determine existing vegetative cover to SWMP tab 17:

2. STORMWATER MANAGEMENT CONTROLS FOR FIRST CONSTRUCTION ACTIVITIES

THE CONTRACTOR SHALL PERFORM THE FOLLOWING:

A. POTENTIAL POLLUTANT SOURCES

1. Refer to Potential Pollutant Sources in SWMP Section 4A. Evaluate, identify and describe all potential sources of pollutants at the site in accordance with subsection 107.25 and place any Control Measures required to contain potential pollutants.

B. OFFSITE DRAINAGE (RUN ON WATER)

1. Place Control Measures to address run-on water in accordance with subsection 208.03.

C. CONSTRUCTION DEWATERING:

1. Obtain a CDPS Dewatering Permit from CDPHE if conditions of their Low Risk Guidance for Discharges of Uncontaminated Groundwater to Land are not met; see subsections 107.02 and 107.25.

Refer to CDPHE Low Risk Discharge Guidance Document of Uncontaminated Groundwater to Land.

<https://www.colorado.gov/pacific/sites/default/files/WQ%20LOW%20RISK%20GW.pdf>

D. VEHICLE TRACKING CONTROL

1. Control Measures shall be implemented in accordance with subsection 208.04.

E. PERIMETER CONTROL

1. Perimeter control shall be established as the first item on the SWMP to prevent the potential for pollutants leaving the construction site boundaries, entering the stormwater drainage system, or discharging to state waters.
2. Perimeter control may consist of berms, silt fence, erosion logs, existing landforms, or other Control Measures as approved.

3. QUALIFIED STORMWATER MANAGERS:

A. SWMP ADMINISTRATOR FOR DESIGN: CDOT Certified Individual responsible for developing SWMP Plan Sheets and SWMP Site Maps during the design phase.

Name/Title	Contact Information	Certification #
Katie Croell Engineer	303-586-5814 kcroell@sehinc.com	A34F8036

2. **SWMP ADMINISTRATOR FOR CONSTRUCTION:** (As defined in Subsection 208) The Contractor shall designate a SWMP Administrator for Construction. The SWMP Administrator for Construction shall become the operator for the SWMP and assume responsibility for all design changes to the SWMP implementation and maintenance in accordance to 208.03, the SWMP shall remain the property of CDOT. The SWMP Administrator for Construction shall be responsible for implementing, maintaining and revising SWMP, including the title and contact information. The activities and responsibilities of the SWMP Administrator for Construction shall address all aspects of the project's SWMP. (Update the information below for each new SWMP Administrator for Construction) (Copy of TECS Certification must also be included in the SWMP.)

Name/Title	Contact Information (phone & email)	TECS Certification #	Start Date	Engineer Approval

3. **PERMANENT STABILIZATION SUBJECT MATTER EXPERT:** This qualified individual will be either a Regional Environmental Staff member, or an Independent Contractor Controller (Independent Assurance Program). This expert is a project team leader responsible for ensuring project adherence to requirements of the 207 and 212 Project Special Provisions as follows, and will be available for questions regarding permanent stabilization requirements.
1. Review the Topsoil Management Plan and the Permanent Stabilization Site Maps.
 2. Attend the Environmental Pre-construction Conference.
 3. Coordinate the Site Pre-vegetation Conference.
 4. Review and recommend approval of products.
 5. Review and recommend approval of the Quantities Verification Prerequisite.
 6. Attend the Substantial Landscape Completion Walkthrough.
 7. Attend the Final Landscape Completion Walkthrough.

Name/Title	Contact Information [phone & email]

4. DURING CONSTRUCTION

The SWMP should be considered a "living document" that is continuously reviewed and modified. During construction, the following items shall be added, updated, or amended as needed by the Contractor in accordance with Section 208

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- A. MATERIALS HANDLING AND SPILL PREVENTION: prior to construction commencing the Contractor shall submit a Spill Prevention, Control and Countermeasure Plan, see subsection 208.06. Materials handling shall be in accordance with subsection 208.06.
- B. OTHER CDPS PERMITS: List applicable CDPS permits associated with the permitted site and activities.
- C. STOCKPILE MANAGEMENT: shall be done in accordance with subsections 107.25 and 208.07
- D. CONCRETE WASHOUT: Concrete wash out water or waste from field laboratories and paving equipment shall be contained in accordance with subsection 208.05.
- E. SAW CUTTING: shall be done in accordance with subsections 107.25, 208.04, 208.05
- F. STREET SWEEPING: shall be done in accordance with subsection 208.04

5. CONTROL MEASURE MAINTENANCE

- A. Maintenance shall be in accordance with subsection 208.04 (f).

6. INTERIM AND PERMANENT STABILIZATION

- The Contractor shall comply with all interim stabilization and permanent stabilization requirements in accordance with subsection 208.04(e).
- A. SEEDING PLAN
The following seed mix(es) and rates are for drill seeding method as shown on the Permanent Stabilization Site Maps shall be used:

COMMON NAME	BOTANICAL NAME	LBS. PLS PER ACRE
Sideoats gramma	Bouteloua Curtipendula var. Vaughn	2.7
Blue grama	Bouteloua Gracilis var. Lovington	1.1
Mountain brome	Bromus Marginatus var. Witmar	5.0
Canada Wildrye	Elymus Canadensis var. Native	3.0
Slender Wheatgrass	Elymus Trachycaulus var. An Louis	2.2
Western Wheatgrass	Pascopyrum Smithii var. Arriba	4.8
Beardless Wheatgrass	Pseudoroegneria Spicata spp. Inermis, var. Bromar	4.5
TOTAL		23.3
- B. SEEDING APPLICATION: The following seeding methods shall be used for all areas which are not surfaced and as shown on the Permanent Stabilization Site Maps. Soil compaction shall be minimized for areas where permanent stabilization will be achieved through vegetative cover.

SEEDING METHOD (subsection 212.05)	ACRE
Seeding (Native) Drill, CDOT Pay Item 212-00706	0.60
TOTAL	0.60

The Contractor shall provide the location of where seed is stored and access to stored seed locations to the Engineer. Seed stored by the Contractor for longer than 30 days will be rejected.
- C. MULCHING APPLICATION: Apply a minimum of 2 tons of certified weed free hay or 2 1/2 tons of certified weed free straw per acre and in accordance with Section 213, and mechanically crimp it into the soil in combination with an organic mulch tackifier.

1. Prior to winter shutdown or the summer seeding window closure: Uncompleted slopes shall be mulched with 2 tons of mulching (weed free) per acre, mechanically crimped into the topsoil in combination with an organic mulch tackifier in accordance with subsections 208 and 213.
- D. SPECIAL REQUIREMENTS:

1. Soil amendments, seedbed preparation, and permanent stabilization mulching shall be accomplished

- is not mulched with permanent stabilization mulch within four working days, the Contractor shall complete interim stabilization methods in accordance with subsection 208.04(e) at no additional cost to the Department.
2. Permanent stabilization mulching shall be accomplished within 24 hours of hydraulic application of native seed.
3. The Contractor shall submit a proposed Permanent Stabilization Phasing Plan to the Engineer for approval showing how the SWMP Permanent Stabilization Plans will be implemented to minimize damage to seeded areas.

E. SOIL AMENDMENT REQUIREMENTS: Minimum amendment material requirements for all disturbances to receive seeding (native).

0.60 Total Acres of Seeding (Native) Drill					
Seeding (Native)Drill Pay Item 212-00706	Pay Item	Description	Amount/Acre	Units	Total For This Method
	212-00700	Organic Fertilizer High N	300	Pounds	180
	212-00701	Compost (Mechanically Applied)	65	CY	39
	212-00703	Humate	200	Pounds	120
	212-00704	Mycorrhizae	8	Pounds	5
	212-00705	Elemental Sulfur	100	Pounds	60

F. SOIL RETENTION COVERING: On slopes and ditches requiring a blanket or turf reinforcement mat (trm), the blanket/trm shall be placed in lieu of mulch and mulch tackifier and placed after seeding (native). See SWMP Site Map for blanket/trm locations.

G. Permanent Stabilization Application Under Structures: Under structures shade patterns should be considered and the use of Median Cover Material (Stone) or other stabilized options with an approved Project Special Provision should be used. See SWMP Site Map for locations.

- H. RESEEDING OPERATIONS/CORRECTIVE STABILIZATION:
Prior to partial acceptance.

1. All seeded areas shall be reviewed by the SWMP Administrator for Construction and or Engineer for bare soils caused by surface or wind erosion. Bare areas caused by surface or gully erosion, blown away mulch, etc. shall be re-graded, seeded, and have the designated mulching applied as necessary, at no additional cost to the project.

2. The Contractor shall maintain seeding/mulch/tackifier/blanket/TRM, mow to control weeds or apply herbicide to control weeds in the seeded areas until Partial Acceptance of the stormwater construction work.

7. PRIOR TO PROJECT FINAL ACCEPTANCE

- A. When directed by the Engineer, removal and disposal of temporary control measures shall be included in the cost of work.
- B. At the end of the project, all ditch checks shall consist of either temporary erosion logs (or equivalent) or permanent riprap.
- C. All storm drains shall be cleaned prior to the Final Acceptance of the project. If required, include work in 202-04002 Clean Culvert.
- D. Refer to Specification 208.10 for Items to be completed prior to requesting partial acceptance of water quality work

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File Name: I70-SH79_SWMP.DWG										STU 0704-248	
Horiz. Scale: 0.5:1 Vert. Scale: As Noted		<div><div></div><div></div><div></div><div></div></div>	Date:	Comments	Init.	No Revisions:		Designer: A. MARQUEZ		Structure	23180
Unit Information Unit Leader Initials						Revised:		Detailer: M. WAGNER		Numbers	
<div><div><div></div><div>Short Elliott Hendrickson Inc.</div><div>Colorado Center Tower One</div><div>Suite 6000</div><div>2000 South Colorado Boulevard</div><div>Denver, CO 80222-7900</div></div><div><div>Tele. (720) 540-6800</div><div>(800) 490-4966</div><div>Fax (720) 540-6801</div></div></div>						Void:		Sheet Subset: SWMP		Subset Sheets: 2 of 6	
		<div><div><div></div><div>town of Bennett</div></div><div><div></div><div>welcome neighbors.</div></div></div>			TOWN OF BENNETT 207 MUEGGE WAY BENNETT, CO 80102 TELE. (303) 644-3249 FAX (303) 644-4125						

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8. NARRATIVES:

Control Measure Matrixes During Construction:

1. Control measure narratives have been included for the CDOT Standard Specifications and Standard Plan M-208 and M-216 along with any non-standard control measures approved during the design process. If a Non-Standard Control Measure not included in the SWMP is proposed and approved by the Engineer the SWMP Administrator for Construction shall do the following: Place an "X" in the column for non-standard and complete a Non-Standard Control Measure Specification and Narrative covering the what, when, where and why the control measure is being used shall be add to the SWMP. The appropriate "X" shall also be added to the implementation phase(s).
2. The SWMP Administrator for Construction shall place an "X" in the column In Use On Site when the control measure has been installed.
3. A "B" in the Initial Activities Column indicates that the control measure shall be installed **before** construction activity starts. Locations and quantities will be discussed during the Environmental Pre-Construction Conference with the Regional Water Pollution Control Manager.

STRUCTURAL Control Measures that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to:

APPLICATION, CONTROL MEASURE	NARRATIVE	M- 208 STANDARD or "X" for NON- STANDARD	IN USE ON SITE	CONTROL MEASURE IMPLEMENTATION PHASE		
				INITIAL ACTIVITIES	INTERIM ACTIVITIES	PERMANENT STABILIZATION
PROTECTION OF EXISTING WETLANDS Fence (plastic) and erosion logs	Fence (plastic) shall be placed in combination with erosion logs to prevent encroachment of construction traffic and sediment into state waters prior to start of construction disturbances. Fence (plastic) shall be placed adjacent to the wetlands; erosion logs shall be placed between the plastic fence and disturbance area. Logs shall be placed to direct flows away from or filter water running into wetlands from disturbance areas.					
PROTECTION OF EXISTING TREES/LANDSCAPING Fence (plastic)	Fence (plastic) shall be used in areas indicated in the plans to prevent encroachment of construction traffic and sediment for the protection of mature trees and/or existing landscaping prior to start of construction disturbances.					
CHECK DAM/DITCH CHECK Erosion log, silt berm, silt dike, rock check dam	Placed in ditches immediately upon completion of ditch grading to reduce velocity of runoff in ditch. For existing ditches, place prior to start of construction disturbances.	M-208				
Storm Drain Inlet Protection In Paved Roadways (Type 1, 2 and 3 as shown on M-208-1, sheet 5 of 11)	Manufactured storm drain inlet protection placed prior to construction disturbances as detailed in M-208-1, to protect existing inlets or immediately upon completion of new inlets to prevent sediment from entering the inlet throughout construction.	M-208				
Storm Drain Inlet Protection In Native Seed Areas (M-604 Standard Inlets Type C and D)	Erosion logs or aggregate bags placed around inlet grate to prevent sediment from entering inlet. Place prior to construction disturbances to protect existing inlets or immediately upon completion of new inlets.	M-208				
CULVERT INLET/OUTLET PROTECTION Erosion logs, aggregate bags	Placed at mouth of culvert inlets and over top of culvert at inlet and outlet where disturbance may be occurring adjacent to pipe to prevent sediment laden water from entering pipe or drainage. Place prior to start of construction disturbances.	M-208		X	X	
TYPE C, TYPE D AND TYPE 13 PROTECTION Erosion logs, aggregate bags, erosion bales	Placed around inlet grate or slope and ditch paving to prevent sediment from entering inlet. Place prior to start of construction disturbances.	M-208		B	X	
STOCKPILE PROTECTION Temporary berm, erosion logs, aggregate bags*	Placed within specified distance, in accordance with subsection 208.06, from toe to contain sediment around stockpile. *Aggregate bags are easily moved and replaced for access during the work day. Place prior to start of stockpile, increase control as stockpile increases size.	M-208				
TOE OF FILL PROTECTION Erosion logs, temporary berm, silt fence, topsoil windrow*	Place prior to slope/embankment work to capture sediment and protect and delineate undisturbed areas. *Can be used to stockpile topsoil for salvage.	M-208		X	X	
PERIMETER CONTROL Erosion logs, silt fence, temporary berm, topsoil windrow*	Placed prior to construction commencing to address potential run-on water from off site, and to divert around disturbed area. *Can be used to stockpile topsoil for salvage.	M-208		B	X	
SEDIMENT CONTROL/ SLOPE CONTROL Silt fence, erosion logs	Placed on the contour of a slope to contain and slow down construction runoff. Place prior to start of construction disturbances.	M-208		X	X	
TEMPORARY SEDIMENT TRAP	Used to capture sediment laden runoff from disturbed areas < 5 acres during construction. Place prior to start of construction disturbances. Outlets that withdraw water from or near the surface may be installed when discharging from basins and impoundments.	M-208				
EMBANKMENT PROTECTION OR TEMPORARY SLOPE DRAIN	Placed as a conduit or chute to drain runoff down slope and to prevent erosion of slope.	M-208				
OUTLET PROTECTION Riprap, or approved other	Material placed as energy dissipater to prevent erosion at outlet structure.	M-601-12				

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CONCRETE WASHOUT <i>In-ground or fabricated</i>	Construction control, used for waste management of concrete and concrete equipment cleaning. Place prior to start of concrete activities.	M-208		X	X	
VEHICLE TRACKING PAD	Source control, placed to prevent tracking of sediment from disturbed area to offsite surface. Place prior to start of construction disturbances.	M-208		B	X	
Engineered SEDIMENT BASIN	Constructed early in project, prior to storm sewer/ditches and in accordance with 208.05(p) to capture storm flow. Outlet structure and/or outfall shall be modified for temporary sediment control using an approved non-standard detail. Outlets that withdraw water from or near the surface shall be installed when discharging from basins and impoundments, unless infeasible					
DEWATERING <i>(Contractor is responsible for obtaining a permit from Colorado Department of Health and Environment.)</i>	Shall be done in such a manner to prevent potential pollutants from entering state waters.					
TEMPORARY STREAM CROSSING	Constructed over stream or drainage to prevent discharge of pollutants from construction equipment into water.					
CLEAN WATER DIVERSION	Placed to divert clean surface or ground water around disturbance area to prevent it from mixing with construction runoff.					
OTHER						

NON-STRUCTURAL Control Measures that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to: Erosion control devices are used to limit the amount of soil loss on site. Sediment control devices are designed to capture sediment on the project site.

APPLICATION, CONTROL MEASURE	NARRATIVE	M- STANDARD or "For NON- STANDARD	IN USE ON SITE	CONTROL MEASURE IMPLEMENTATION PHASE		
				INITIAL ACTIVITY	INTERIM ACTIVITIES	PERMANENT STABILIZATION
VEGETATIVE BUFFER STRIP <i>Fence (plastic)</i>	Finishing component for filtering sediment-laden runoff from disturbance area. Area within CDOT ROW or temporary easement to be identified on SWMP prior to construction starting.					
GRADING APPLICATIONS (LANDFORM)	Existing or created landforms may be used as a control measure if they prevent sediment from entering or leaving the disturbance area. If a landform directs flow of water to a concentrated outfall point, the outfall point shall be protected to prevent erosion. Area to be identified on SWMP prior to construction starting.	M-208				
TOPSOIL MANAGEMENT STOCKPILE/SALVAGE <i>Windrow or stockpile</i>	Prior to any site disturbance work commencing, existing topsoil shall be scraped to a depth four inches or as specified, and placed in stockpiles or windrows. Upon completion of final grading, topsoil shall be evenly distributed over embankment to a depth of four inches or as specified.	M-208		X	X	X
SURFACE ROUGHENING / GRADING TECHNIQUES	Temporary stabilization of disturbance and to minimize wind and erosion.				X	
SEEDING (TEMPORARY)	Temporary stabilization used for over wintering of disturbance or used to control erosion for areas scheduled for future construction.					
BONDED FIBER MATRIX or MULCHING (HYDRAULIC)	Not to be used in areas of concentrated flows, i.e. ditch lines. To be for either Interim or Permanent Stabilization placed as a surface cover for erosion control. May be used as surface cover when work is temporarily halted and as approved by the Engineer for stockpiles.					
<i>Straw or Hay</i> MULCH/MULCH TACKIFIER	Interim or Permanent Stabilization placed as a surface cover for erosion control and or seeding establishment. To be installed as Interim Stabilization as a surface cover when work is temporarily halted and as approved by the Engineer				X	X
SPRAY-ON MULCH BLANKET <i>(Not to be used in areas of concentrated flows, i.e. ditch lines.)</i>	Interim or Permanent Stabilization placed as a surface cover for erosion control and or seeding establishment. To be installed as temporary surface cover when work is temporarily halted and as approved by the Engineer					
SEEDING PERMANENT (NATIVE)	Permanent Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas.				X	X
SOIL RETENTION BLANKET (SRB)	Permanent Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas.	M-216			X	X

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Unit Information Unit Leader Initials				
<div><div><div><div></div><div>SEH</div></div><div>Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 6000 2000 South Colorado Boulevard Denver, CO 80222-7900</div><div>Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801</div></div></div>				



TOWN OF BENNETT
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welcome neighbors.

As Constructed	STORMWATER MANAGEMENT PLAN			Project No./Code
No Revisions:				STU 0704-248
Revised:	Designer: A. MARQUEZ	Structure Numbers		23180
Void:	Detailer: M. WAGNER			
	Sheet Subset: SWMP	Subset Sheets: 4 of 6		Sheet Number 35

TURF REINFORCEMENT MAT (TRM)	Permanent Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas. Placed in channels or on slopes for erosion control, channel liner and seeding establishment.	M-216				
Sweeping	Source control, used to remove sediment tracked onto paved surfaces and to prevent sediment from entering drainage system. Sweep daily and at the end of the construction shift as needed. Kick brooms shall not be permitted.			X	X	X
OTHER						

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9. TABULATION OF STORMWATER QUANTITIES

A. Control Measure sediment removal and disposal shall be paid for as: 208 Removal and Disposal of Sediment (Equipment) and 208 Removal and Disposal of Sediment (Labor). All other control measure maintenance shall be included in the cost of the control measure.

PSP Spec.	Pay Item	Description	Pay Unit	Initial Const	Interim Const.	Permanent Stabilization	*Total Quantity
X	202-04002	Clean Culvert	Each	4		1	5
	207-00700	Topsoil (Onsite)	CY			485	485
	207-00704	Subgrade Soil Preparation	SY			2909	2909
	208-00002	Erosion Log Type 1 (12 inch)	LF	150	150		300
	208-00020	Silt Fence	LF	1800			1800
	208-00046	Pre-fabricated Concrete Washout Structure (Type 1)	Each		1		1
	208-00075	Pre-fabricated Vehicle Tracking Pad	Each	2			2
	208-00103	Removal and Disposal of Sediment (Labor)	Hour		8		8
	208-00105	Removal and Disposal of Sediment (Equipment)	Hour		8		8
	208-00106	Sweeping (Sediment Removal)	Hour	8	8	8	24
	212-00706	Seeding (Native) Drill	Acre		0.90	0.60	1.50
	213-00002	Mulching (Weed Free Hay)	Acre		0.48	0.32	0.80
	213-00061	Mulch Tackifier	LB		97	65	162
	216-00201	Soil Retention Blanket (Straw/Coconut) (Biodegradable class 1)	SY		2019	1346	3365
	217-00020	Herbicide Treatment	Hour			8	8
X	700-70380	F/A Erosion Control	FA	0.33	0.33	0.33	1

*It is anticipated that additional control measures and control measure quantities not shown on the SWMP Site Maps shall be required on the project for unforeseen conditions and replacement of items that are beyond their useful service life, see subsections 208.03 and 208.04. **Quantities for all control measures shown above are estimated, and have been increased for unforeseen conditions and normal control measure life expectancy.** Quantities shall be adjusted according to the conditions encountered in the field as directed and approved by the Engineer. Payment shall be for the actual work completed and material used.

**Pay Item 208-00071 is included for anticipated maintenance of vehicle tracking pads based on the service life of the control measure in the field. The use of the material shall be directed and approved by the Engineer.

*** Using Erosion Control Management Pay Item on the project must be approved by the Regional Environmental Staff and Engineer. See 208.11 for method of measurement for the day pay unit.

**** F/A refers to CDOT's Force Account Pay Items.

10. BIOLOGICAL IMPACTS and DEWATERING

- A. ENVIRONMENTAL IMPACTS:
- 1. Wetland Impacts: NO
 - 2. Stream Impacts: NO
 - 3. Threatened and Endangered Species: No species are anticipated to be impacted by the project.

A. DEWATERING: (Not covered under the CDPHE guidance document *Low Risk Discharge Guidance Discharges of Uncontaminated Groundwater to Land*): <https://www.colorado.gov/pacific/sites/default/files/WQ%20LOW%20RISK%20GW.pdf>

- 1. Dewatering: Refer to other environmental permits in accordance with subsection 107.02 and the permits contained in Tab 16 of the SWMP.
- 2. If groundwater does not meet water quality standards for receiving water a separate CDPS Dewatering Permit shall be obtained by the Contractor from CDPHE in accordance with subsections 107.02 and 107.25.

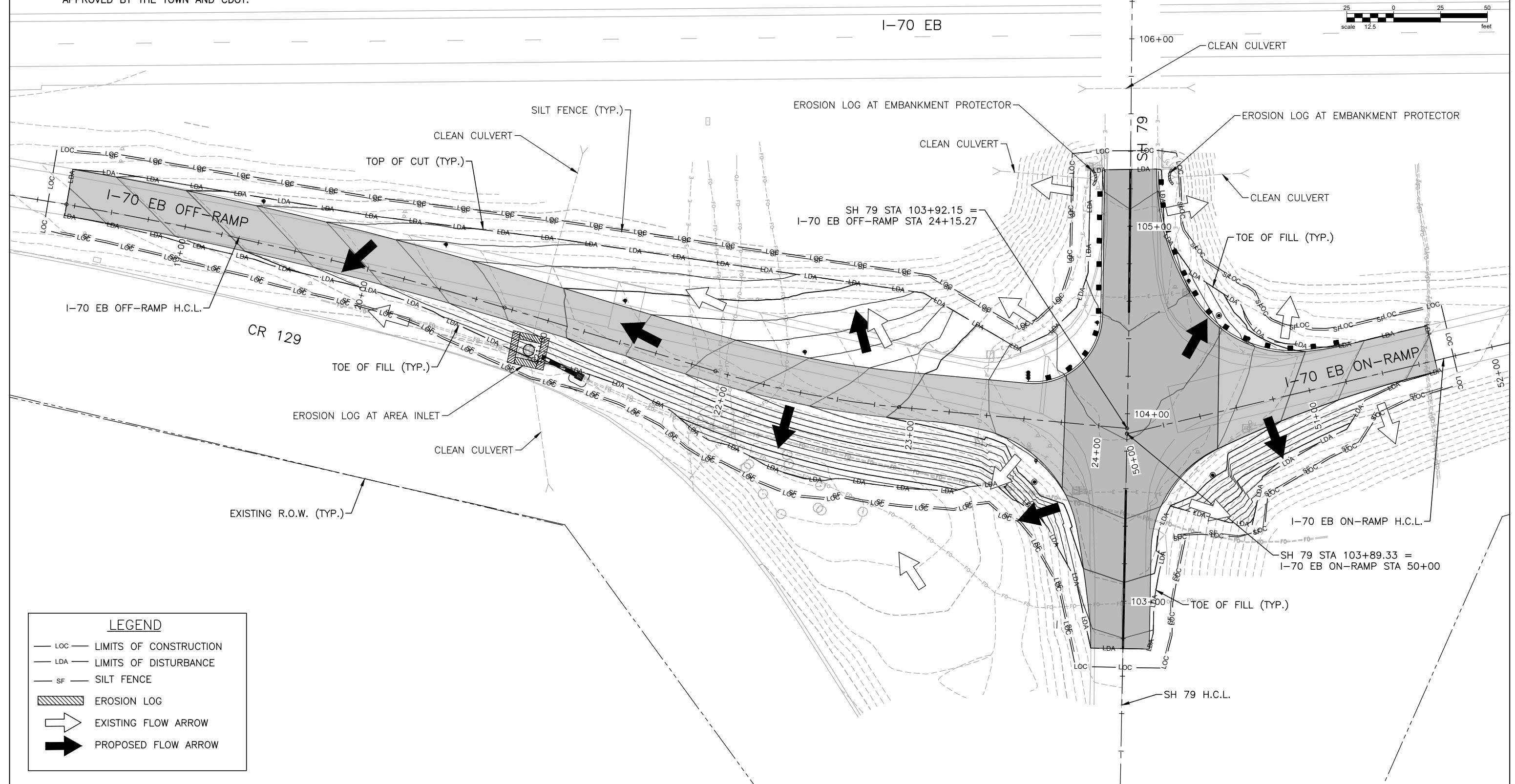
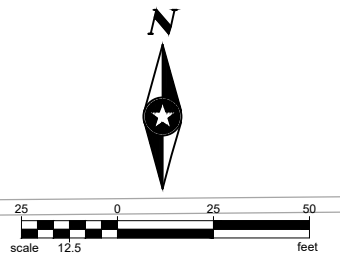
11. NOTES


- 1. EMC (or SWMP Administrator for Construction or Erosion Control Inspector) is included in the cost of the work.
- 2. Wetlands were not delineated with this project. Contractor shall protect all wetlands within the project area if needed.
- 3. Items required for miscellaneous erosion control work as directed by the Engineer will not be measured and paid for separately, but shall be included in the cost of the work.

Print Date: 3/29/22		Sheet Revisions			As Constructed		STORMWATER MANAGEMENT PLAN			Project No./Code	
File Name: I70-SH79_SWMP.DWG										STU 0704-248	
Horiz. Scale: 0.5:1		<div><div></div><div></div><div></div><div></div></div>	Date:	Comments	Init.	No Revisions:		Designer: A. MARQUEZ		Structure	23180
Vert. Scale: As Noted						Revised:		Detailer: M. WAGNER		Numbers	
Unit Information						Void:		Sheet Subset: SWMP		Subset Sheets: 6 of 6	
Unit Leader Initials										Sheet Number 37	
<div><div><div></div><div>Short Elliott Hendrickson Inc.</div><div>Colorado Center Tower One</div><div>Suite 6000</div><div>2000 South Colorado Boulevard</div><div>Denver, CO 80222-7900</div></div><div><div>Tele. (720) 540-6800</div><div>(800) 490-4966</div><div>Fax (720) 540-6801</div></div></div>		<div><div><div></div><div>town of</div><div>Bennett</div></div><div><div></div><div>welcome neighbors.</div></div></div>			TOWN OF BENNETT 207 MUEGGE WAY BENNETT, CO 80102 TELE. (303) 644-3249 FAX (303) 644-4125						

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- NOTES:
1. INSTALL EROSION LOG FOR EXISTING AREA INLET APPROXIMATELY 108 FT TO THE WEST.
 2. CLEAN OUT ANY EXISTING CULVERTS IN THE PROJECT AREA OF DISTURBANCE.
 3. LOCATION OF STAGING AREA, CONCRETE WASHOUT STRUCTURE AND VEHICLE TRACKING PADS TO BE DETERMINED BY THE CONTRACTOR AS APPROVED BY THE TOWN AND CDOT.



Print Date: 3/29/22	
File Name: I70-SH79_EROSION CONTROL PLAN.DWG	
Horiz. Scale: 0.5:1	Vert. Scale: As Noted
Unit Information	Unit Leader Initials
 Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 6000 2000 South Colorado Boulevard Denver, CO 80222-7900	
Tele: (720) 540-6800 (800) 490-4966 Fax (720) 540-6801	

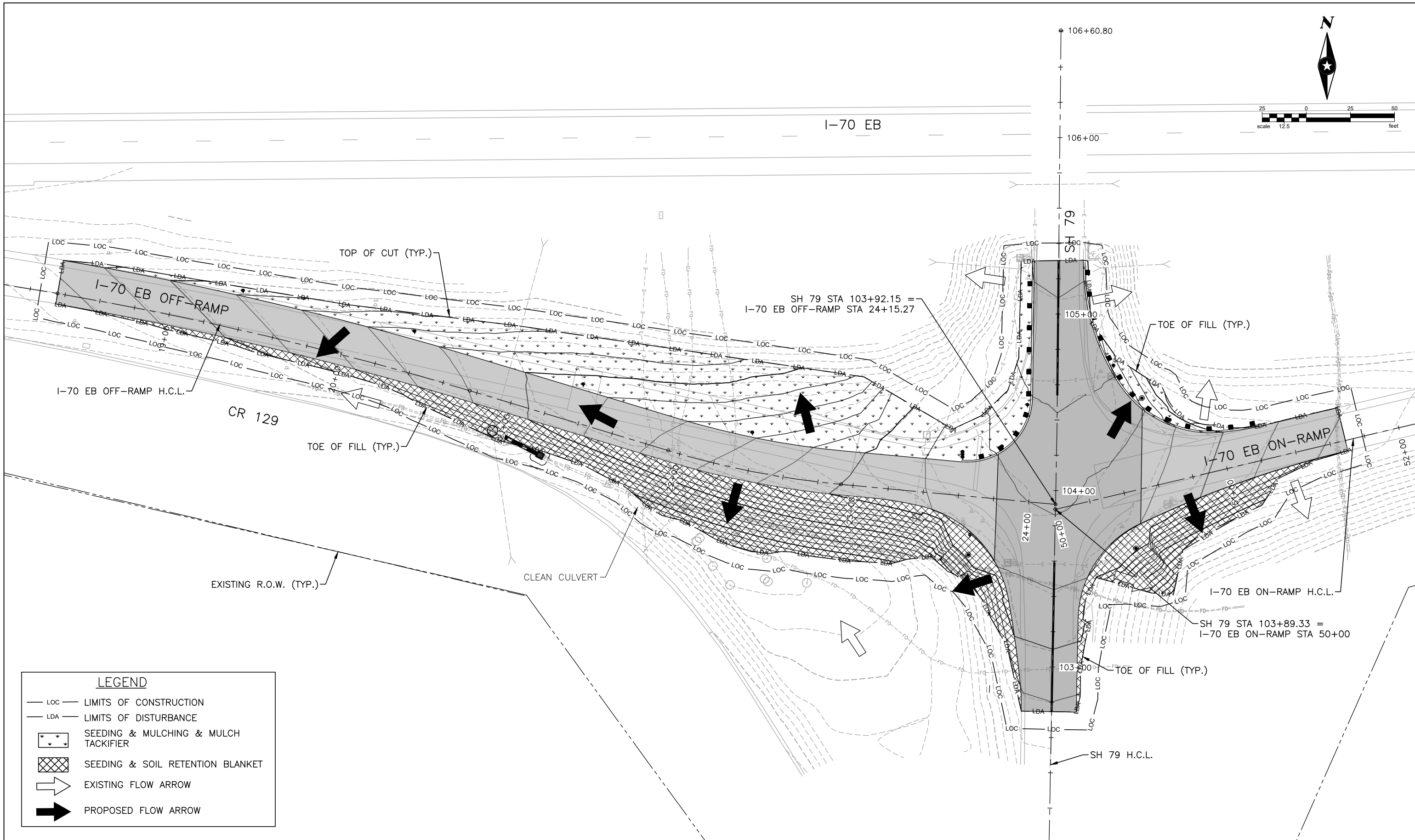
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Date:	Comments	Init.



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No Revisions:				STU 0704-248
Revised:		Designer: A. MARQUEZ	Structure Numbers	23180
Void:		Detailer: K. KULESZA		
		Sheet Subset: EC	Subset Sheets: 1 of 2	Sheet Number 38

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Unit Information Unit Leader Initials						Revised:	Detailer: K. KULESZA		Sheet Number 39		
Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 6000 2000 South Colorado Boulevard Denver, CO 80222-7900 Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801						Void:	Sheet Subset: EC	Subset Sheets: 2 of 2			
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UTILITY GENERAL NOTES

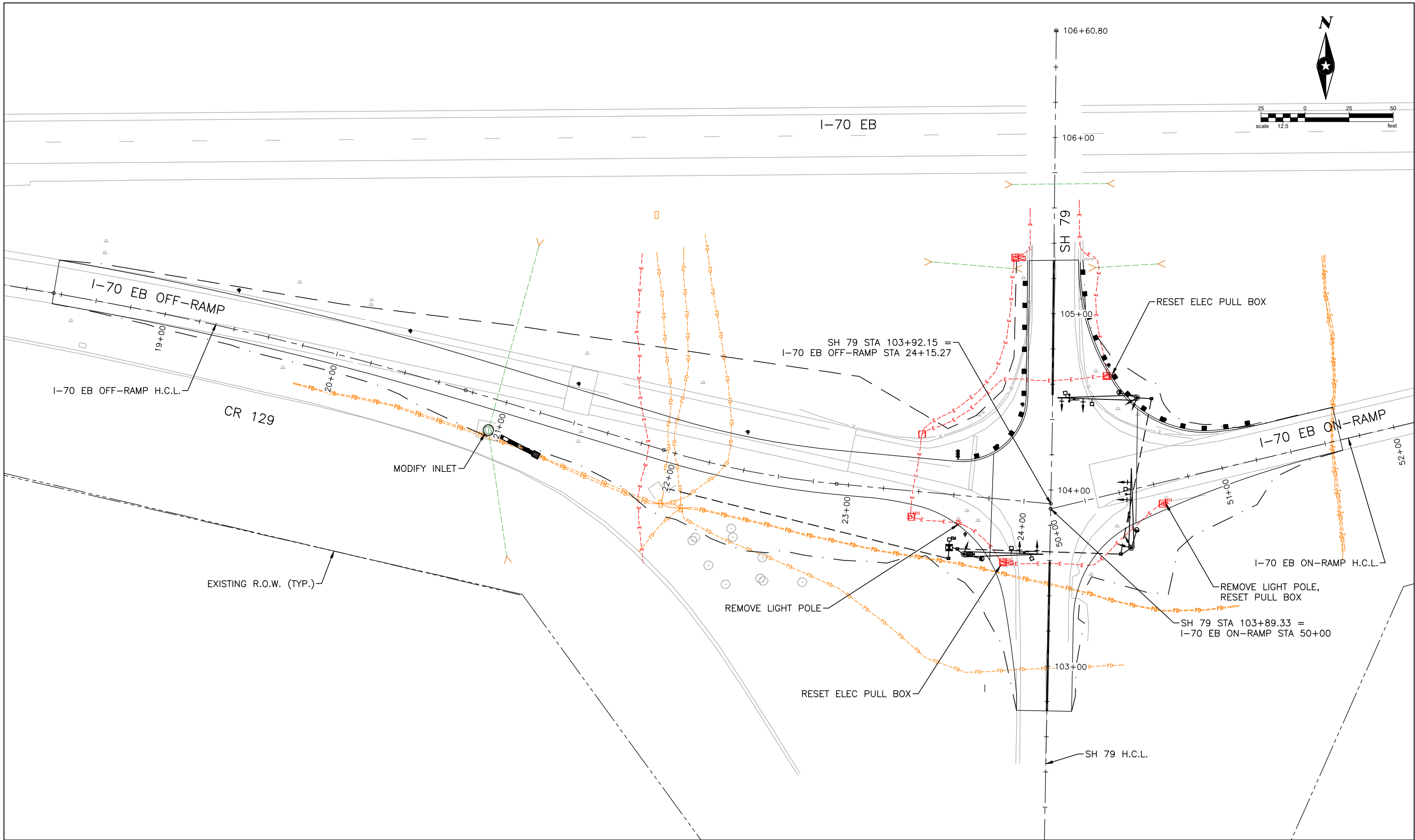
1. UTILITIES AS SHOWN ON THE PLAN SHEETS ARE PLOTTED FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR'S ATTENTION IS DIRECTED TO SUBSECTION 105.11 OF THE STANDARD SPECIFICATIONS CONCERNING UTILITIES.
2. UTILITIES ARE DEPICTED ON THESE PLANS IN ACCORDANCE WITH THEIR ACHIEVED QUALITY LEVEL AS DEFINED IN THE AMERICAN SOCIETY OF CIVIL ENGINEER'S DOCUMENT ASCE 38 "STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA." RELIANCE UPON THIS DATA FOR RISK MANAGEMENT PURPOSES DURING BIDDING DOES NOT RELIEVE THE EXCAVATOR OR UTILITY OWNER FROM FOLLOWING ALL APPLICABLE UTILITY DAMAGE PREVENTION STATUTES, POLICIES, AND/OR PROCEDURES DURING CONSTRUCTION.
3. THE CONTRACTOR SHALL COMPLY WITH ARTICLE 1.5 OF TITLE 9, CRS ("EXCAVATION REQUIREMENTS") WHEN EXCAVATING OR GRADING IS PLANNED IN THE AREA OF UNDERGROUND UTILITY FACILITIES. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITIES AT LEAST TWO (2) BUSINESS DAYS, NOT INCLUDING THE ACTUAL DAY OF NOTICE, PRIOR TO COMMENCING SUCH OPERATIONS. THE CONTRACTOR SHALL CONTACT COLORADO 811 (FORMERLY UTILITY NOTIFICATION CENTER OF COLORADO (UNCC)) AT PHONE NO. 811 OR CO811.ORG, TO HAVE LOCATIONS OF COLORADO 811 REGISTERED LINES MARKED BY MEMBER COMPANIES. ALL OTHER UNDERGROUND FACILITIES SHALL BE LOCATED BY CONTACTING THE RESPECTIVE OWNER. UTILITY SERVICE LATERALS SHALL ALSO BE LOCATED PRIOR TO BEGINNING EXCAVATION OR GRADING.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES AS NECESSARY TO ENSURE THAT THE UTILITIES WILL NOT BE IMPACTED BY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY OWNERS TO BE ON-SITE DURING POTHOLING. IF EXISTING UTILITIES ARE WITHIN CLOSE PROXIMITY HORIZONTALLY OR VERTICALLY TO PROPOSED INSTALLATIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER. ANY EXISTING UTILITY, WHICH IS TO REMAIN BUT IS DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATION, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
5. CDOT UTILITY AS-CONSTRUCTED REQUIREMENTS, DATA CONTENT AND ACCURACY 1.1. ALL UTILITY INSTALLATIONS, WITHIN CDOT RIGHT OF WAY (ROW), SHALL BE COLLECTED USING CDOT'S MOBILE APPLICATION (POINTMAN). IF REQUIRED PLEASE CONTACT CDOT AT CDOTPOINTMAN@GMAIL.COM IN ORDER TO OBTAIN NEW LOGIN AND PASSWORD INFORMATION. DOWNLOAD POINTMAN MOBILE APPLICATION THROUGH THE APPLE STORE (IOS) OR GOOGLEPLAY (ANDROID). FINALLY, PLEASE WATCH THE FOLLOWING QUICK START GUIDE, THE VIDEO CAN BE FOUND AT THE FOLLOWING LINK: [HTTPS://YOUTU.BE/X-TMvNK7vZW](https://youtu.be/X-TMvNK7vZW)

UTILITY CONTACT LIST

UTILITY OWNER	UTILITY	CONTACT PERSON(S)	PHONE NUMBER	EMAIL
ALTERNATIVE ENERGY SOLUTIONS	FIBER	MARK RAY	303-947-4641	1.CLR.INC@GMAIL.COM
BIJOU TELEPHONE COOP	FIBER / PHONE	BRIAN CREVELING	303-822-5400	CREVELING@NETECIN.NET
CENTURY LINK (LUMEN)	FIBER	THOMAS LONGAN		THOMAS.LONGAN@CENTURYLINK.COM
EASTERN SLOPE RURAL TELEPHONE	FIBER/PHONE	CLINT FELZIEN	719-743-2460	CLINTF@ESTRA.COM
CORE (INTERMOUNTAIN REA)	ELECTRIC	GIS DEPARTMENT		MAPS@IREA.COOP
CDOT REGION 1	ELECTRIC, FIBER, FIBER BACKBONE	JILL SCOTT	303-512-5805	JILL.SCOTT@STATE.CO.US
ZAYO BANDWIDTH	FIBER	ERIC BOE	303-481-6121	ERIC.BOE@ZAYO.COM

Print Date: 3/29/22		<div><div></div><div></div><div></div><div></div><div></div></div>	Sheet Revisions			<div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div><div>TOWN OF BENNETT 207 MUEGGE WAY BENNETT, CO 80102 TELE. (303) 644-3249 FAX (303) 644-4125</div><div><div></div><div></div></div><div>welcome neighbors.</div></div>	As Constructed		UTILITY NOTES			Project No./Code	
File Name: I70-SH79_UTILITY PLAN.DWG			Date:	Comments	Init.		No Revisions:					STU 0704-248	
Horiz. Scale: 0.5:1 Vert. Scale: As Noted			<div></div>					Revised:	Designer: A. MARQUEZ	Structure Numbers	23180		
Unit Information Unit Leader Initials			<div></div>					Void:	Detailer: K. KULESZA		Sheet Number	41	
<div><div><div></div><div></div></div><div>Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 6000 2000 South Colorado Boulevard Denver, CO 80222-7900</div><div>Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801</div></div>	<div></div>						Sheet Subset: UTILITY		Subset Sheets: 1 of 2				

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<div><div><div></div><div>Short Elliott Hendrickson Inc.</div><div>Colorado Center Tower One</div><div>Suite 6000</div><div>2000 South Colorado Boulevard</div><div>Denver, CO 80222-7900</div></div><div><div>Tele. (720) 540-6800</div><div>(800) 490-4966</div><div>Fax (720) 540-6801</div></div></div>						Void:		Sheet Subset: UTILITY	Subset Sheets: 2 of 2	Sheet Number 41	
<div><div><div></div><div>town of</div><div>Bennett</div></div><div><div></div><div>welcome neighbors.</div></div></div>					TOWN OF BENNETT 207 MUEGGE WAY BENNETT, CO 80102 TELE. (303) 644-3249 FAX (303) 644-4125						

I-70 (EXIT 304)/SH-79 Interchange Improvements

SUE Utility Investigation - Phase 1 and Phase 2

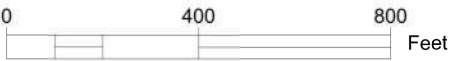
BENNETT, CO

SHEET NO.	INDEX OF SHEETS
1	TITLE SHEET
2	GENERAL NOTES AND MAP KEY
3	PLAN UTILITY DRAWING



PROJECT AREA

PROJECT LOCATION MAP



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Survey Information:

This plan set shows subsurface and aerial utilities for the Phase 1 field investigation as of January/February 2021, and the Phase 2 investigation as of December 2021 and are subject to change. The engineering survey of the surface features and field delineated buried utilities was completed by UMS, Inc personnel. City and County of Denver approved survey control was used to tie all survey data to the project coordinate system. Control points CP104, CP107, and CP108 were used for site calibrations. The transcription of survey data to the CADD plans was completed by UMS, Inc.

Subsurface Utility Engineering (SUE) Notes:

For this project, UMS Inc. was responsible for the field designating of the existing buried utilities to the extent practical and as detailed in the authorized scope of work for this project. Users of this data set must understand and adhere to the limitations associated with the designated Quality Levels assigned to the depicted facilities. UMS, Inc. recommends that vacuum excavations or other nondestructive methods are used to obtain 3D data on utilities in potential conflict with proposed design and construction. UMS, Inc. strongly recommends users of this data become orientated with the ASCE/CI 38–02 standard guidelines and the corresponding data limitations inferred by the designated Quality Levels prior to employing the data set for design purposes. In addition, the SUE report(s) for this project must always accompany the existing utility reference CADD file to ensure proper interpretation and usage of the data set.

SUE Quality Levels:

SUE Phase I (Designating) and Phase II (Locating) activities enable the assignment of ASCE/CI 38–02 "Quality Levels" to the depicted underground utilities. The following four Quality Levels are used to identify the degree of reliability to which the utilities are depicted:

- Quality Level (QL) D: Information derived from existing records and/or oral recollections. This information is adequate for rudimentary planning or background purposes only.
- QL C: Information obtained by surveying and plotting visible above ground utility features and by using professional judgment in correlating this information to QL D data. Use of this information alone may result in 15 – 30% of underground utilities omitted or mapped with more than two feet of error, according to FHWA studies.
- QL B: Information obtained through the application of appropriate surface geophysical methods to determine the existence and approximate horizontal position of subsurface utilities. QL B observations should be reproducible by surface geophysics at any point along the corresponding depiction. This information is tied to the project survey control points to tolerances defined by the work scope and reduced onto plan documents.
- QL A: These observations provide discrete and precise horizontal and vertical coordinates by the actual exposure subsequent measurement of the subsurface utility at a specific point. Vacuum excavation equipment is typically used to minimize the potential for utility damage.

Note – Although reproducible, QL B positions can be influenced by physical factors that distort geophysical observations and the resulting interpreted location. For example, with inductive electromagnetic methods, adjacent conductors may create secondary magnetic fields that superposition with the primary field, causing the resulting apparent position to be slightly different from the actual position.

Disclaimer:

A possibility exists that abandoned, forgotten, non–detectable, undocumented or newly installed utilities may be overlooked using standard Investigative procedures. This information is for design purposes only; markings placed on the ground or depictions developed by UMS are not intended to be used in lieu of Call 811 for excavation purposes. The use of this information by others does not relieve a contractor from the duty to comply with applicable utility prevention damage laws and regulations, including but not limited to, giving notifications to utility owners or "One Call / Call Before You Dig (811)" prior to excavation.

Refer to ASCE/CI 38–02 Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data and the ASCE Subsurface Utility Engineering for Municipalities for more information.

- * All UMS survey information obtained during the SUE investigation is based on an Engineering Survey.
- ** Unless otherwise noted, all aerial installation depictions are based on surveyed pole locations and apparent cable/conductor connectivity as observed and logged by UMS field crews.

Aerial background Imagery is for general reference only.

UTILITY MAPPING/RECORDS CONTACT LIST

Utility	Utility Type	Contact	Phone/Email
Alternative Energy Solutions	Fiber	Mark Ray	303-947-4641, 1.clr.inc@gmail.com
Bijou Telephone Co-op Association	Fiber, Telephone	Brian Creveling	303-822-5400, creveling@netecin.net
CenturyLink (Lumen)	Fiber		1-877-366-8344, relocations@centurylink.com
CDOT Region 1	Electric, Fiber, Fiber Backbone	Jill Scott	303-512-5805, jill.scott@state.co.us
Eastern Slope Rural Telephone Association	Fiber, Telephone	Clint Felzien	719-743-2460, clintf@estra.com
CORE Electric Cooperative	Electric		1-800-332-9540
Zayo Bandwidth	Fiber	Robert Williams	303-632-0017, robertd.williams@zayo.com

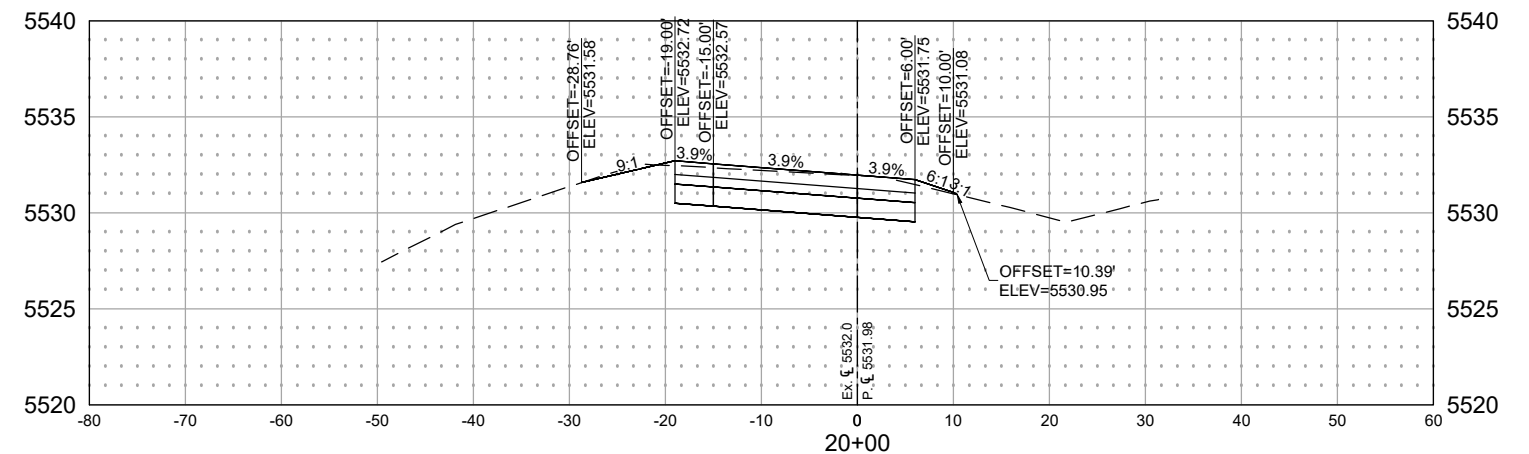
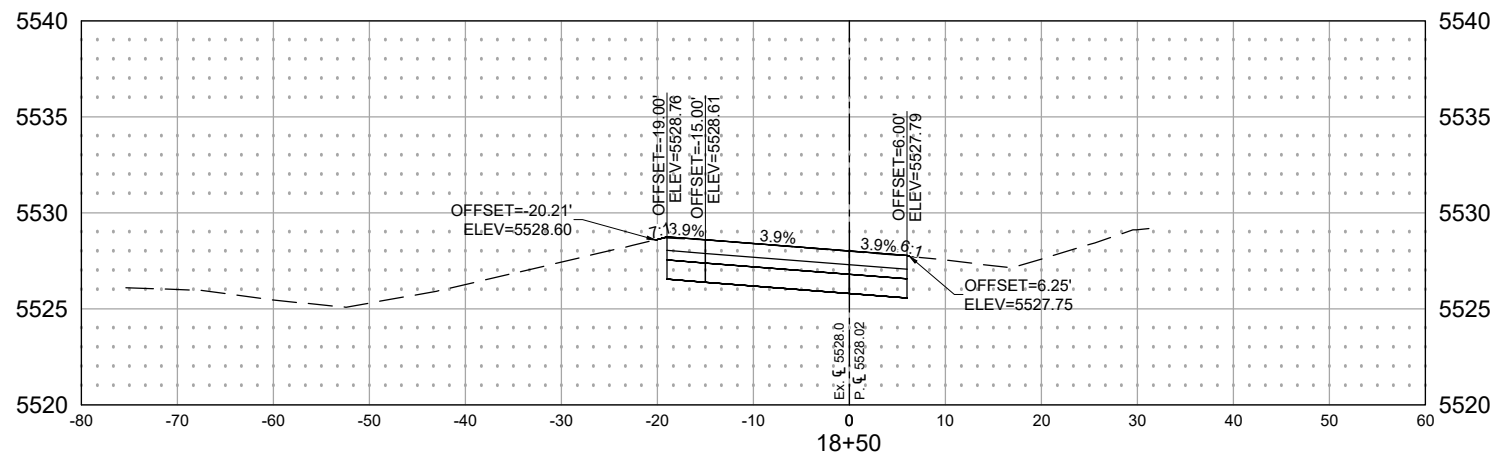
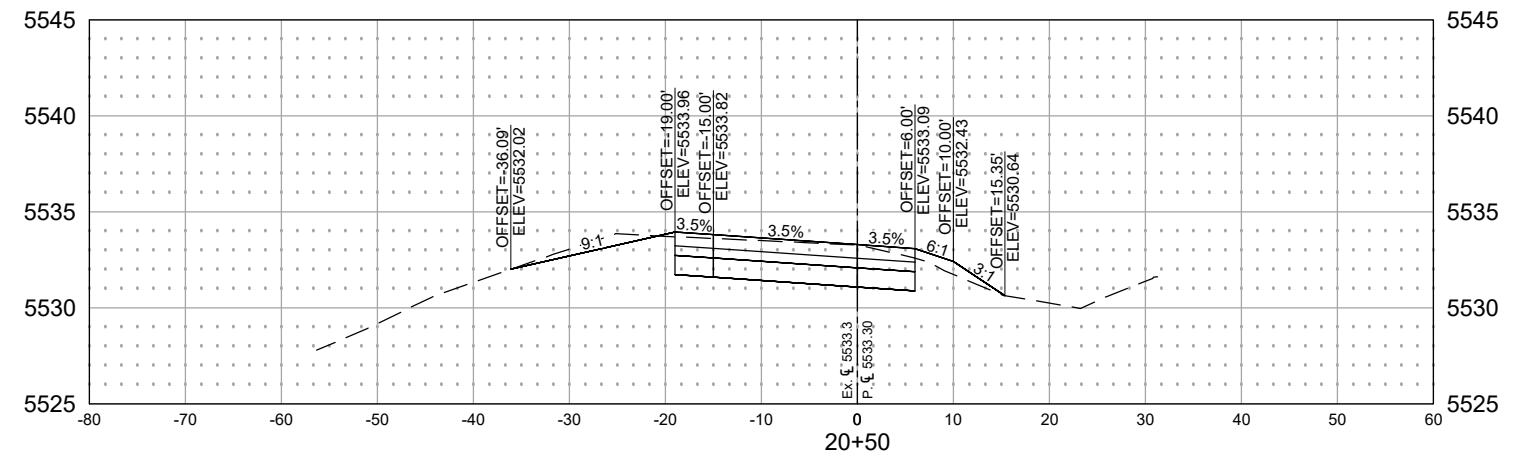
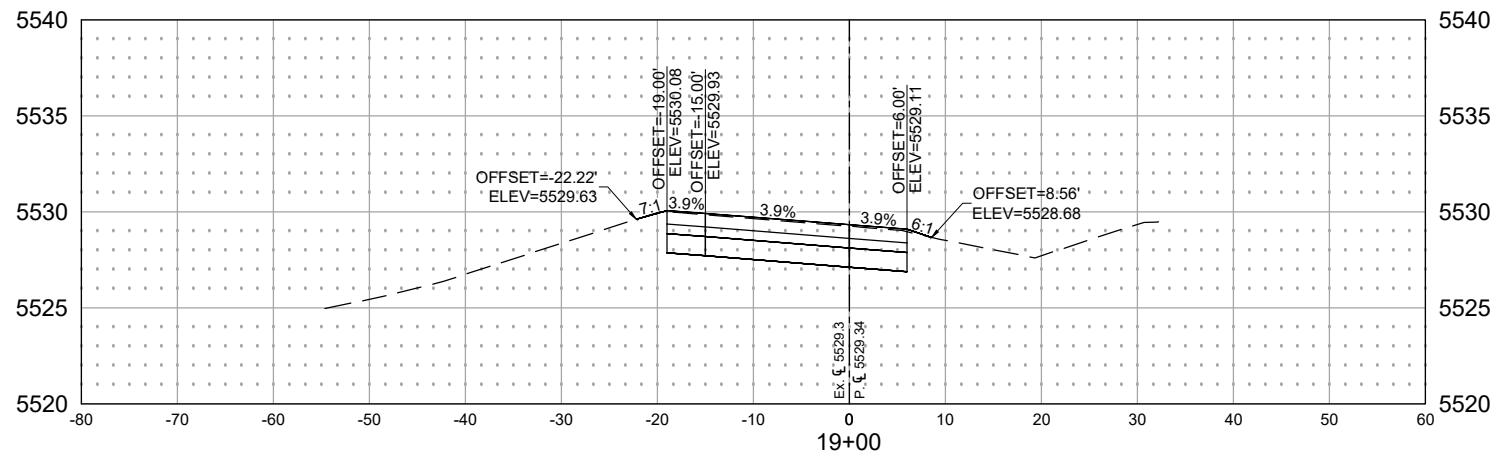
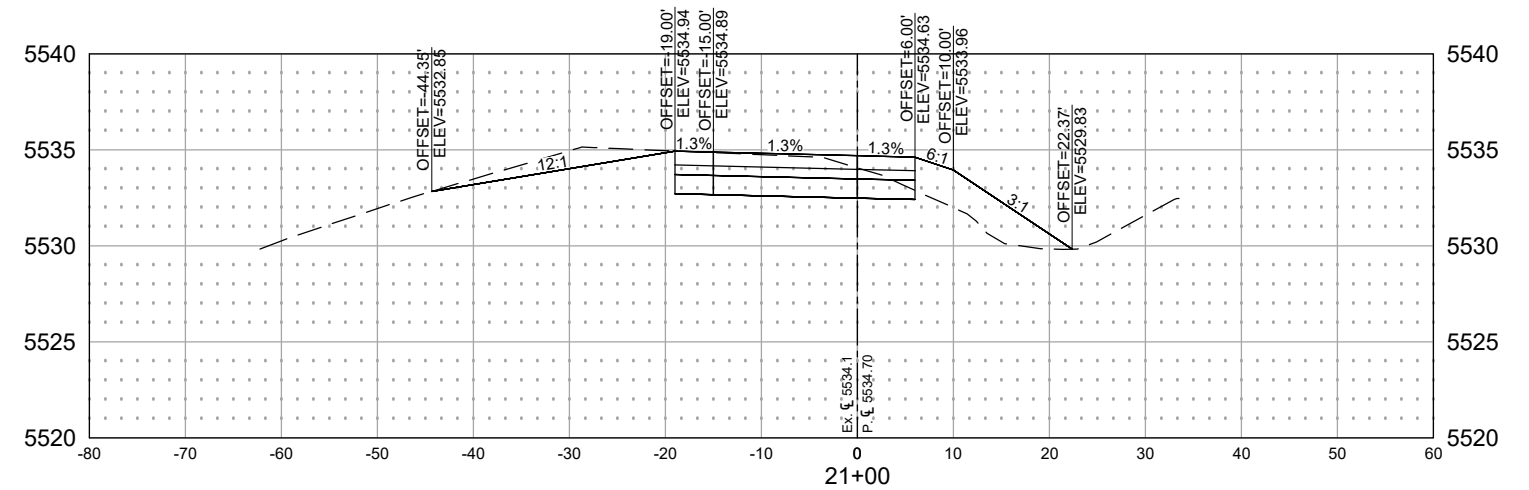
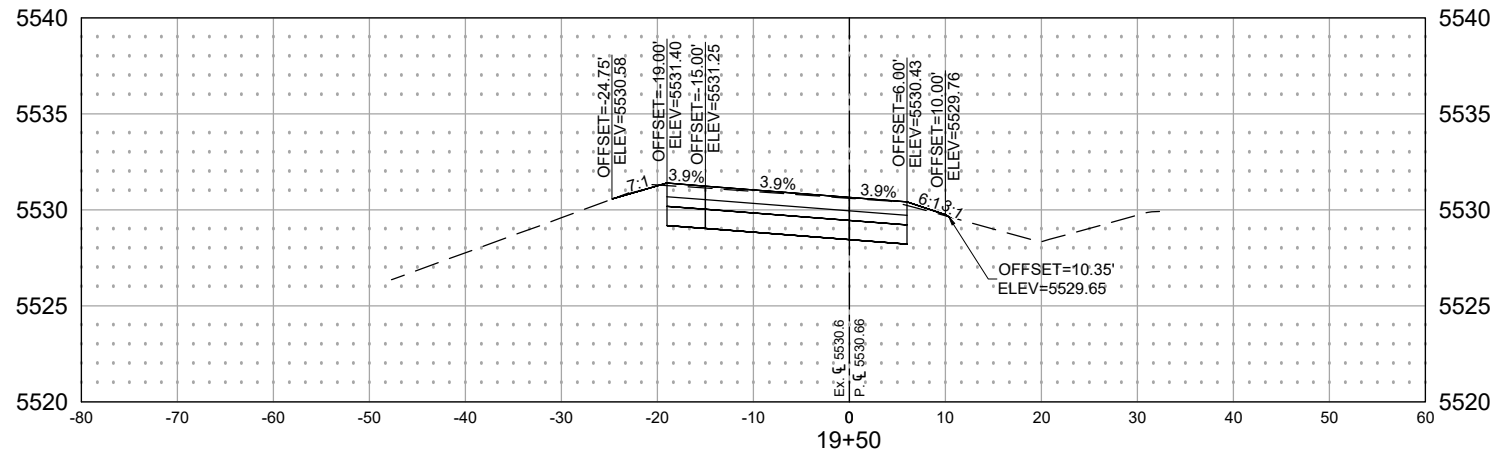
LEGEND

	EXISTING BURIED FIBER LINE		FIBER MANHOLE
	EXISTING BURIED NATURAL GAS LINE		GAS VALVE
	EXISTING BURIED POWER LINE		GUY ANCHOR
	EXISTING BURIED SANITARY SEWER LINE		TELEPHONE PED
	EXISTING BURIED STORM SEWER LINE		POWER POLE
	EXISTING BURIED TELEPHONE LINE		SANITARY SEWER MANHOLE
	EXISTING BURIED WATER LINE		STORM DRAIN CULVERT
	PROJECT BOUNDARY		STORM DRAIN INLET
			STORM DRAIN MANHOLE
			WATER FIRE HYDRANT
			WATER MANHOLE
			WATER METER
			WATER VALVE
			TEST HOLE

EQUIPMENT USED

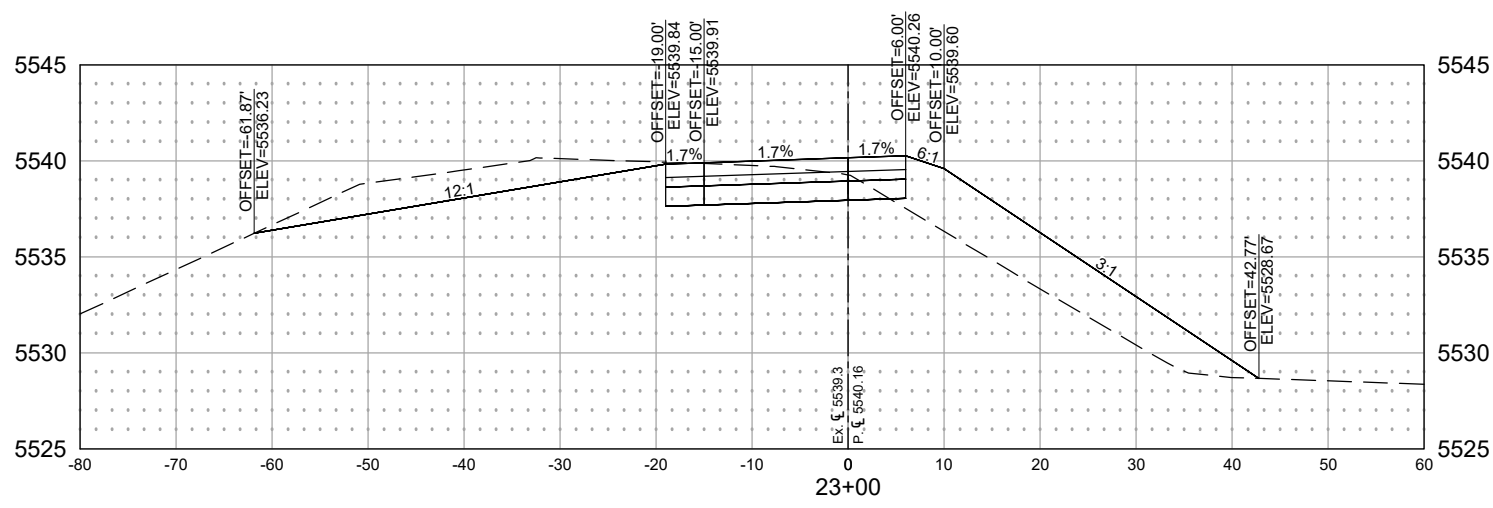
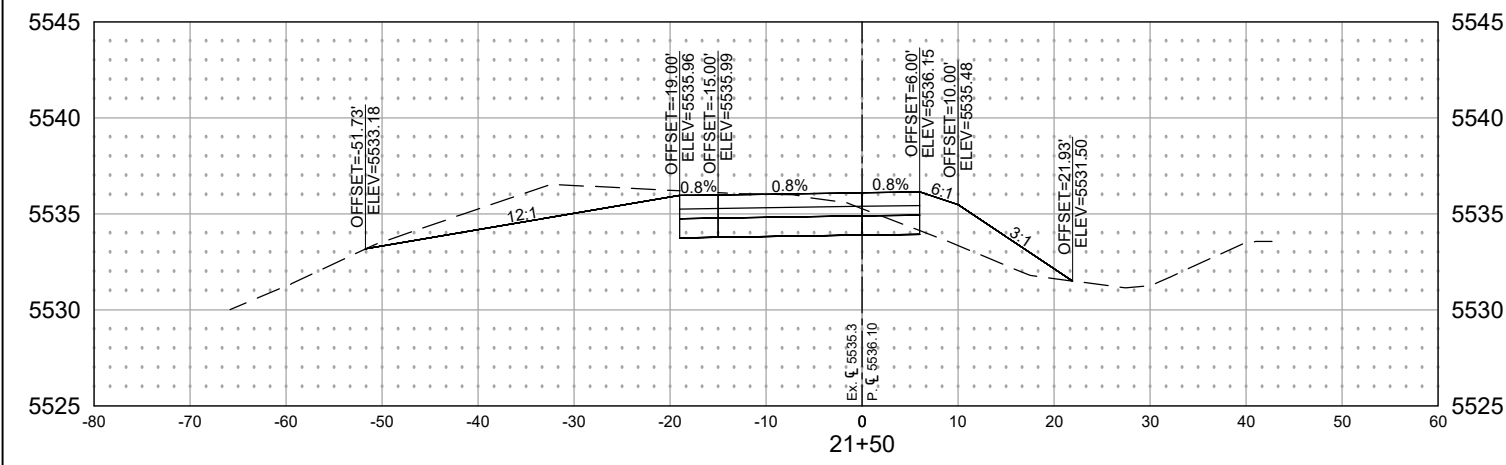
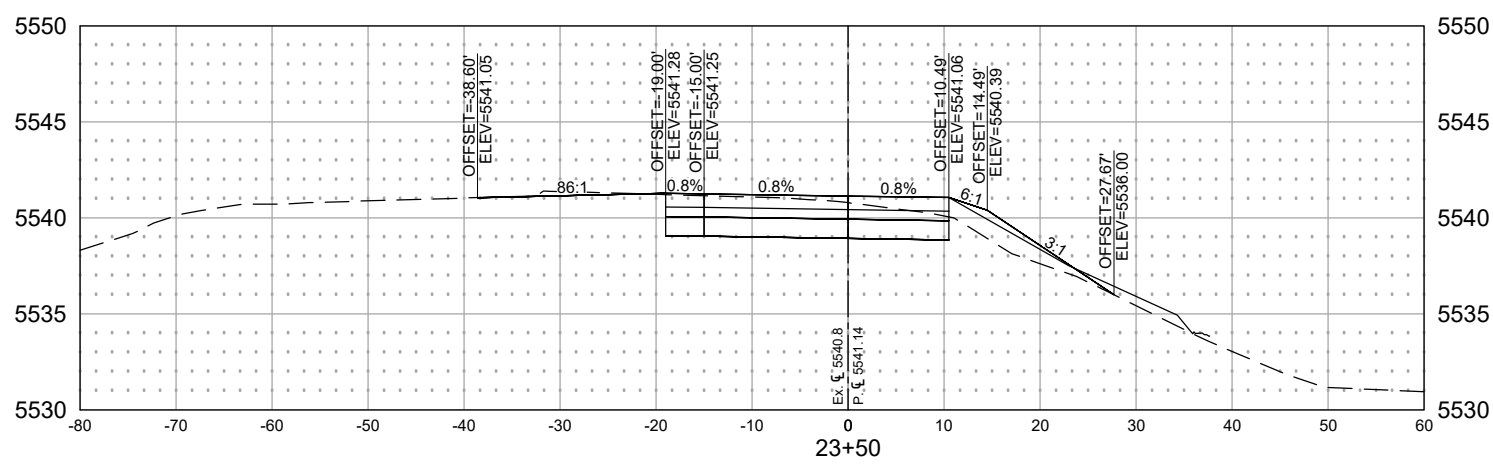
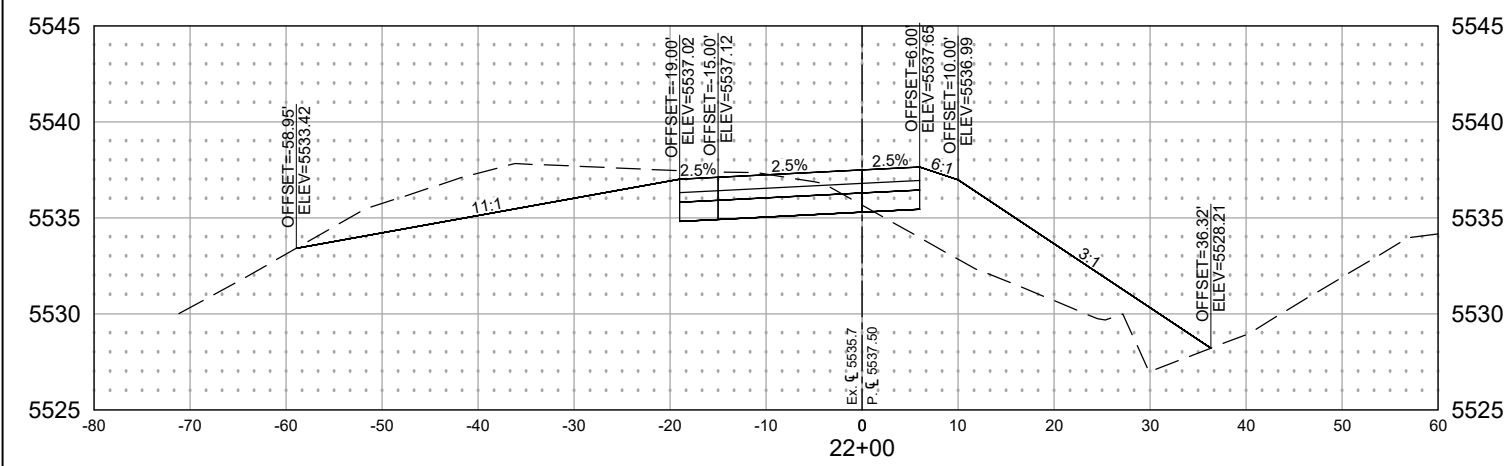
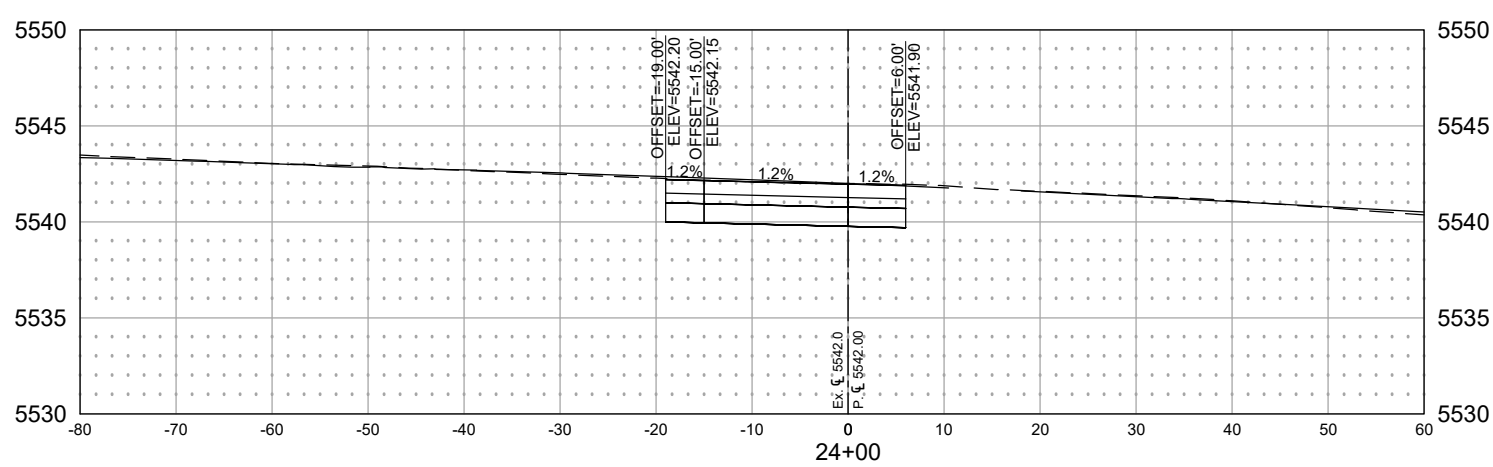
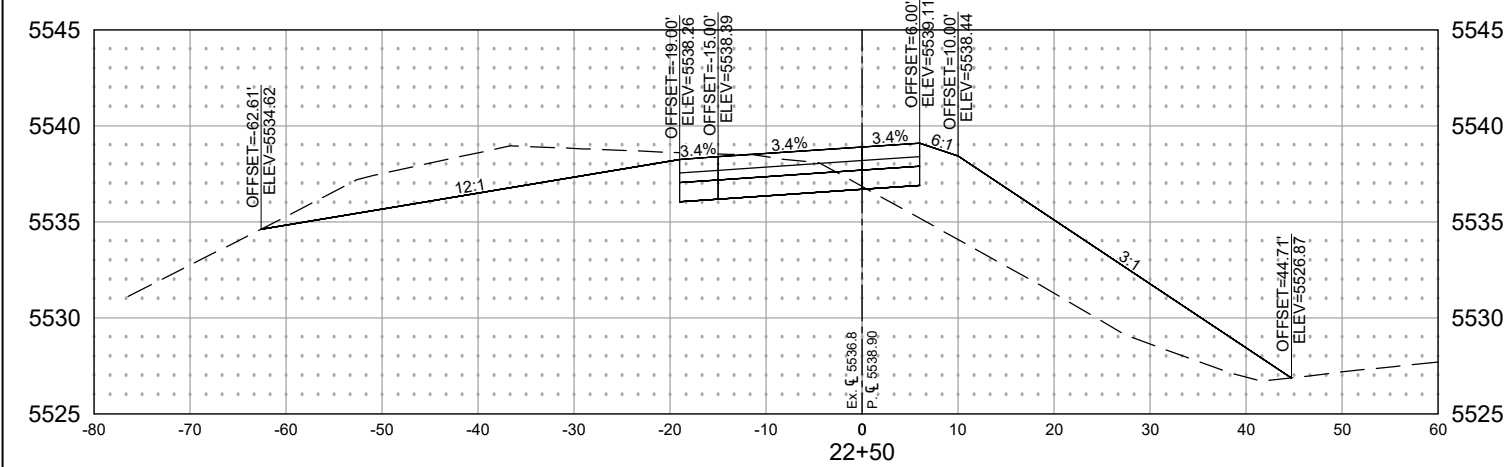
Radiodetection RD8000 Cable Locator
Trimble TSC7 Data Collector
Trimble R10 GNSS System

Print Date: 1/5/22		<div><div>UTILITY MAPPING SERVICES 15065 W. 44th Ave. Golden, CO 80403 (720)230-0780</div></div>	Sheet Revisions			<div><div>207 MUEGE WAY, BENNETT CO, 80102 (303) 644-3249</div><div>welcome neighbors.</div></div>	1-70 (EXIT 304)/SH-79 INTERCHANGE IMPROVEMENTS EXISTING UTILITIES		Project No./Code	
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Unit Information Unit Leader Initials			<input type="text"/>	5/3/21	REV 1		ABRH			
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			<input type="text"/>	2/25/22	UPDATE CORE OWNERSHIP		ABRH			
						No Revisions:				
						Revised:	Designer: ABRH	Structure Numbers		
						Void:	Detailer: ABRH			
							Sheet Subset: UTIL	Subset Sheets: 2 of 3	Sheet Number 02	



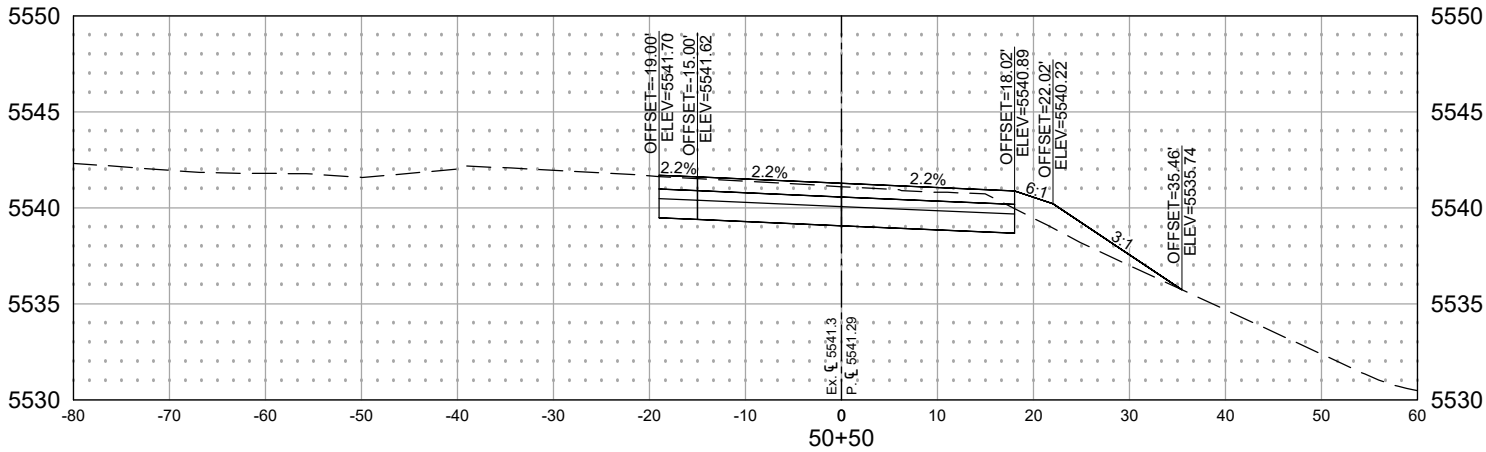
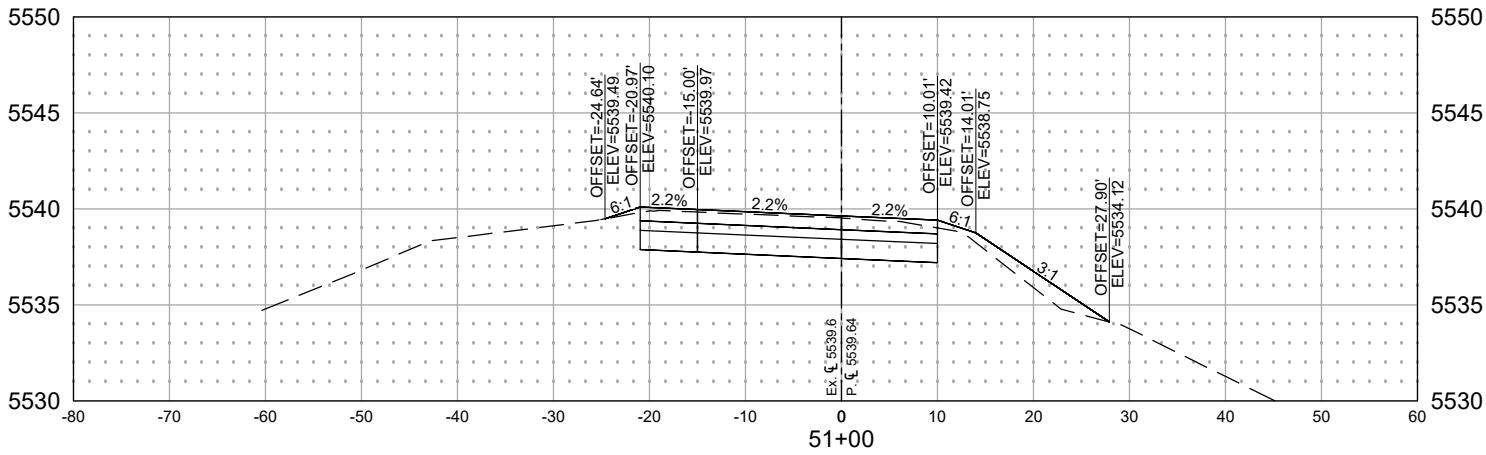
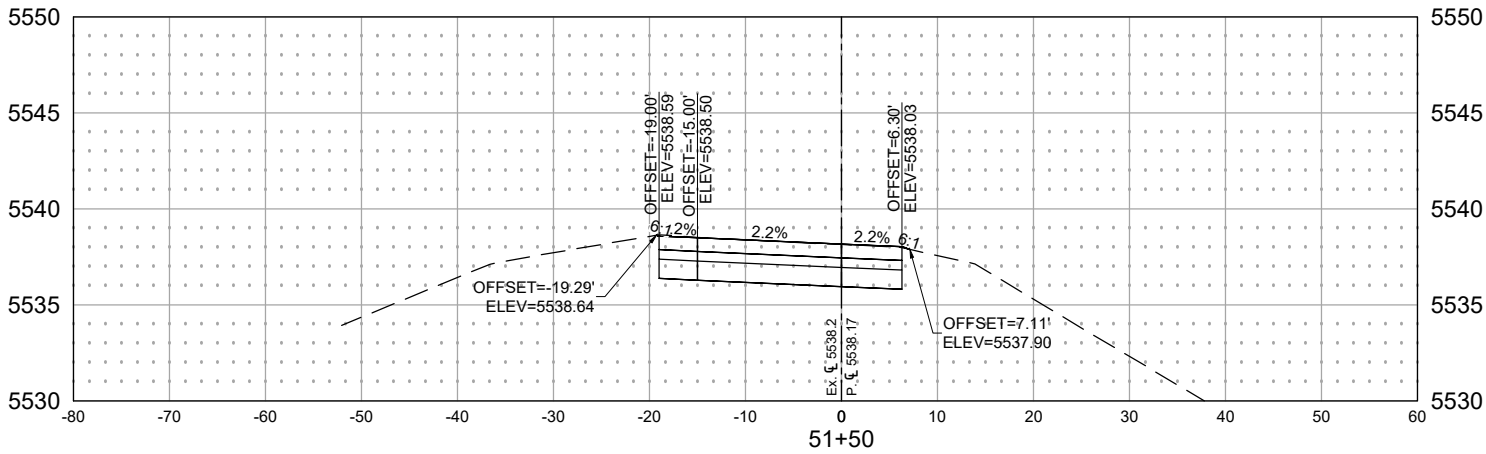
Print Date: 3/29/22		 <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> TOWN OF BENNETT 207 MUEGGE WAY BENNETT, CO 80102 TELE. (303) 644-3249 FAX (303) 644-4125 </div>		As Constructed		CROSS SECTIONS I-70 EB OFF-RAMP		Project No./Code	
File Name: I70-SH79_CROSS SECTIONS.DWG				No Revisions:				STU 0704-248	
Horiz. Scale: 0.5:1 Vert. Scale: As Noted				Revised:		Designer: A. MARQUEZ	Structure Numbers	23180	
Unit Information Unit Leader Initials				Void:		Detailer: K. KULESZA		Sheet Number XS1	
 <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 6000 2000 South Colorado Boulevard Denver, CO 80222-7900 Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801 </div>						Sheet Subset: XSECT Subset Sheets: 1 of 4			

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File Name: I70-SH79_CROSS SECTIONS.DWG			Date:	Comments	Init.		No Revisions:					STU 0704-248	
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Unit Information Unit Leader Initials			<div></div>				Void:		Detailer: K. KULESZA	Numbers			
<div><div>Short Elliott Hendrickson Inc. Colorado Center Tower One Suite 6000 2000 South Colorado Boulevard Denver, CO 80222-7900</div></div>			<div></div>						Sheet Subset: XSECT	Subset Sheets: 2 of 4	Sheet Number XS2		
Tele. (720) 540-6800 (800) 490-4966 Fax (720) 540-6801			<div></div>										

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Print Date: 3/29/22

File Name: I70-SH79_CROSS SECTIONS.DWG

Horiz. Scale: 0.5:1

Vert. Scale: As Noted

Unit Information

Unit Leader Initials

Short Elliott Hendrickson Inc.
Colorado Center Tower One
Suite 6000
2000 South Colorado Boulevard
Denver, CO 80222-7900

Tele. (720) 540-6800
(800) 490-4966
Fax (720) 540-6801

Sheet Revisions

Date:	Comments	Init.



welcome neighbors.

TOWN OF BENNETT
207 MUEGGE WAY
BENNETT, CO 80102
TELE. (303) 644-3249
FAX (303) 644-4125

As Constructed

No Revisions:

Revised:

Void:

CROSS SECTIONS I-70 EB ON-RAMP

Designer: A. MARQUEZ

Detailer: K. KULESZA

Sheet Subset: XSECT

Structure
Numbers

Subset Sheets: 3 of 4

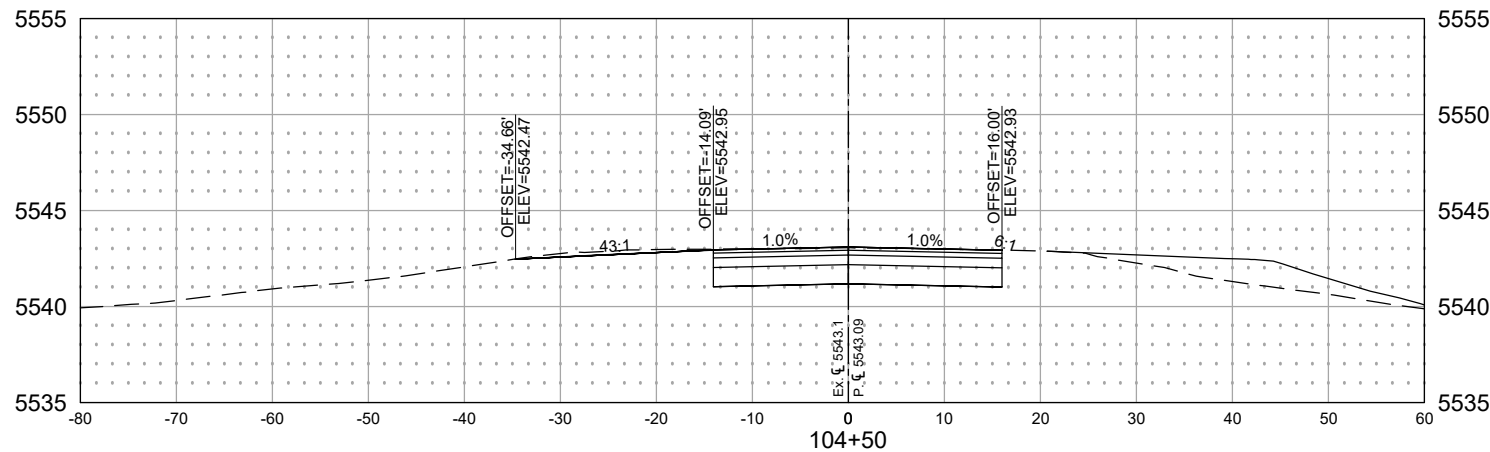
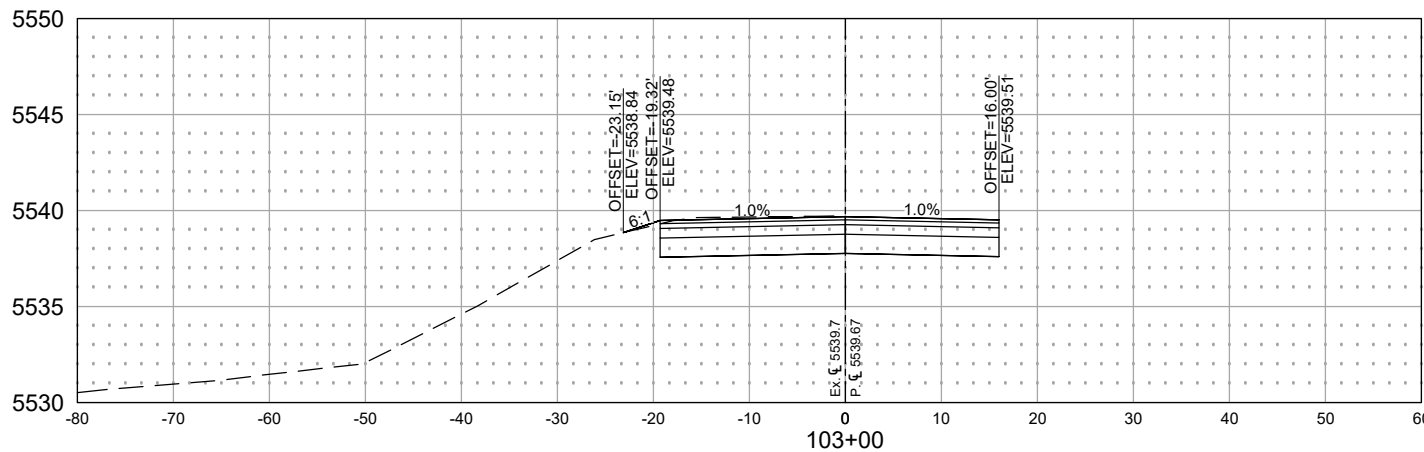
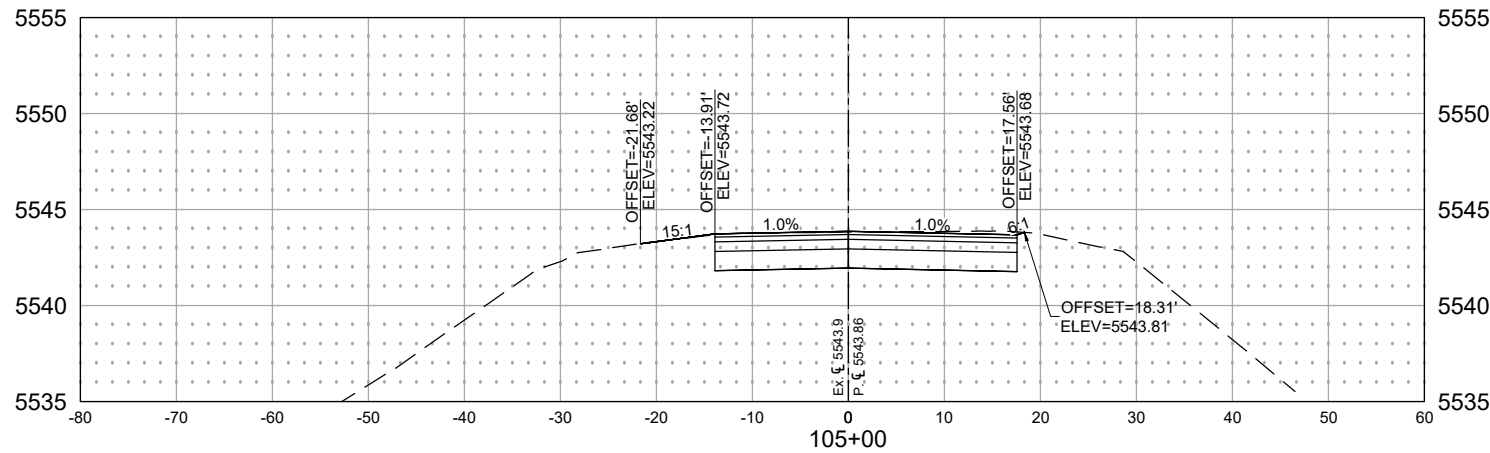
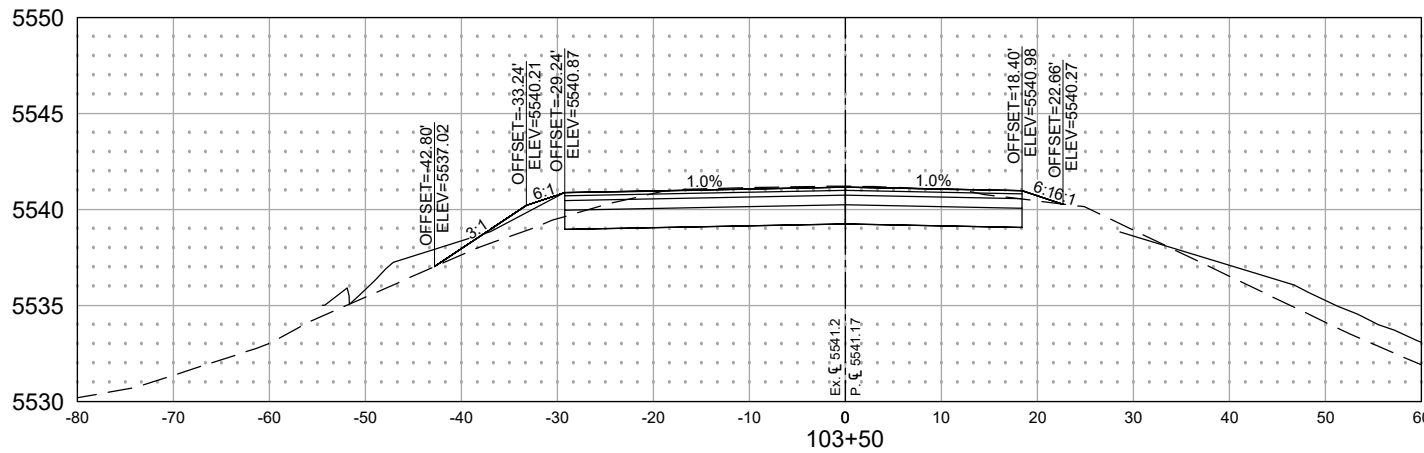
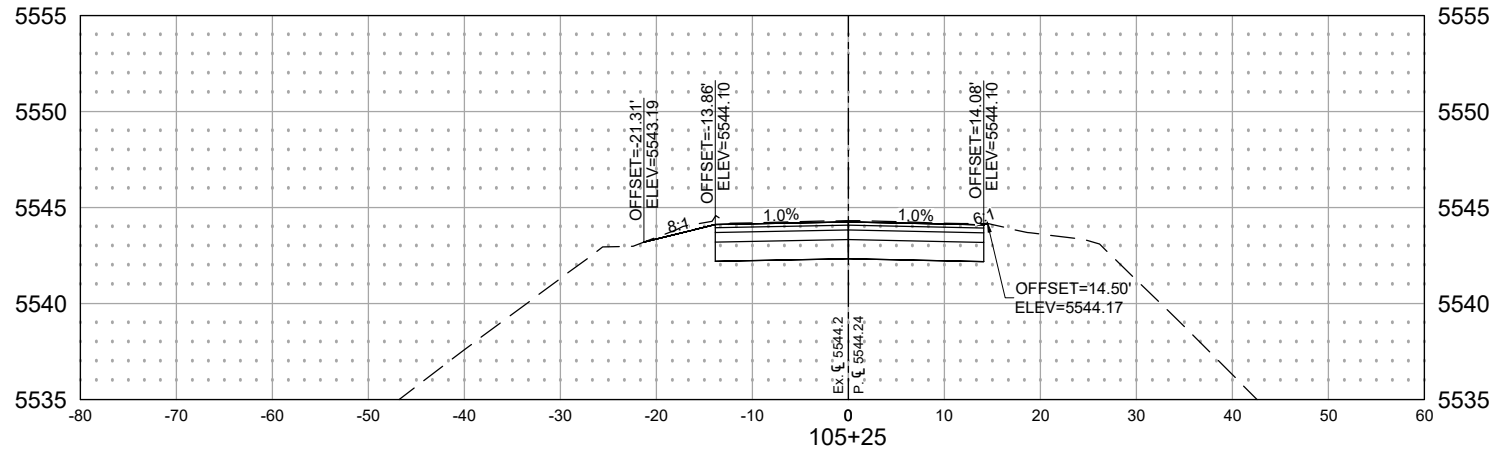
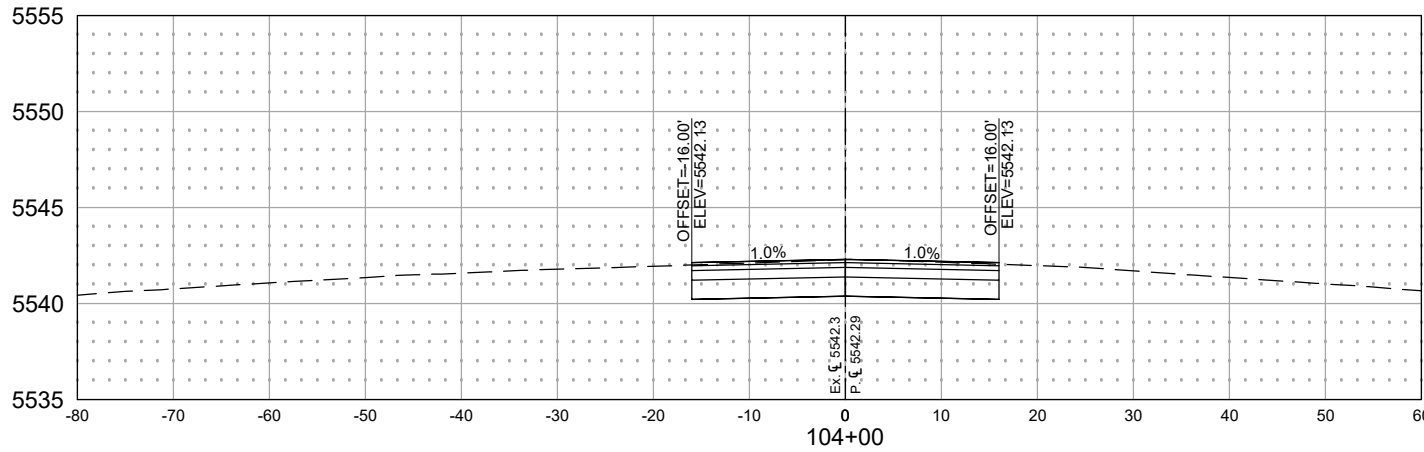
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STU 0704-248

23180

Sheet Number

XS3



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TOWN OF BENNETT
207 MUEGGE WAY
BENNETT, CO 80102
TELE. (303) 644-3249
FAX (303) 644-4125

welcome neighbors.